

ABSTRACT

Title of Dissertation: CONTENT-BASED INSTRUCTION IN THE
 CONTEXT OF CHINESE IMMERSION: AN
 EXPLORATION OF CORRECTIVE
 FEEDBACK

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Immersion education encourages students to learn a new language by actually using the language, and has become a popular form of foreign language instruction since the 1970s. Recent observations of immersion classrooms have shown a high frequency of teachers' oral corrective feedback (CF). From an interactionist perspective of second language (L2) acquisition that finds a solid foundation for the benefit of conversational interaction in L2 learning, CF as a form of interaction is argued to give L2 learners learning opportunities that attend to the communicative content and linguistic information. This study aims to fill a gap in the literature on immersion—the lack of studies examining CF in Chinese immersion settings, by studying learning opportunities brought about by oral CF in Chinese immersion classrooms. Classroom observations, video-tapings, stimulated recalls, and interviews in four Chinese immersion classrooms revealed that the Chinese immersion teachers explicitly or implicitly corrected students' errors most of the time, and used eight

types of CF strategies to treat their errors, among which the elicitation and recast were used more frequently. In addition, teachers and students were found to engage in negotiations through CF in different interactional contexts (content, language, communication and management), and contexts focusing on content and language allowed more CF and more modified output. Furthermore, the results revealed that students tended to notice the CF in content-focused interactions (compared to other three types of interactional contexts), and that their perception accuracy is influenced by the type of CF and the recipient of the CF. Based on the interaction approach to second language acquisition, the findings of this study contribute to the field by constructing a deeper understanding of intricacies of CF in the context of Chinese immersion teaching. In particular, the study has emphasized the positive role of interactional feedback in second language learning, re-conceptualized output immediately following the CF as learner response to feedback, and revealed the facilitative role of modified output in advancing the engagement of the learner internal mechanism. Moreover, the study has implications for immersion education, specifically concerning CF strategies, pedagogies that balance content and language instruction, immersion program administration, and teacher education.

CONTENT-BASED INSTRUCTION IN THE CONTEXT OF CHINESE
IMMERSION: AN EXPLORATION OF CORRECTIVE FEEDBACK

by

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Dedication

I dedicate this dissertation to my father Jianhua Yao and my mother Manzhu Qi. Without their unconditional love, encouragement and support, I would not come to the US to pursue the doctoral degree. Meanwhile, this dedication goes to my dearest husband Miao Fan, who has been the anchor of my life and where my home is! The dedication also goes to my parents-in-law, Guorui Fan and Yixi Liu, who has provided tremendous care and understanding.

本论文献给我的父亲姚建华和我的母亲戚满珠。没有他们无私的爱，无尽的鼓励和支持，我不可能来美国读博士。本文同时献给我最亲爱的老公樊淼，感谢他爱我、包容我，给我归属感，有他在的地方就有家！本文也献给我的公公樊国瑞和婆婆刘轶稀，感谢他们给予我很多的关爱和理解。

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Chapter 1: Introduction

1.1 Background of the Study

Foreign language education has been at the center of many controversies and hopes in the past century in the United States. The first half of the century saw a fast diversification of the immigrant pool, and foreign language education was restricted due to the push for American homogenization. The patriotic mentality caused by the two world wars contributed to the bans on the teaching of some foreign languages, especially German. The second half of the century was a period of greater opportunity for the development of foreign language education. The successful launch of *Sputnik* by the Soviet Union in 1957 stimulated the advancement of science, math and other subjects within education, primarily in modern languages in the US, as it tried to compete with the Soviet Union with the passing of the National Defense Education Act by Congress (Jensen, 2008). Since 1995, new efforts have aimed at improving language education with the release of the National Standards for Foreign Language Learning. However, US students are still falling behind in their foreign language capabilities and suffer in the global market compared to other countries (Pufahl, Rhodes, & Christian, 2001). Over the past decade, foreign language education has decreased at the elementary and middle school levels (Rhodes & Pufahl, 2010). This seems to run counter to what is expected in the globalized world—a world becoming increasingly interconnected, where mastery of more than one language is critical for business, diplomacy, and academic and cultural exchange. For students, learning more than one language opens the door to opportunities

with practical and intellectual benefits, enriching academic and life experience, providing better job prospects, and strengthening brain health.

Due to China's growing political and economic influence, there has been considerable growth in the number of students studying Chinese (specifically referring to Mandarin Chinese in this study). The National K-12 Foreign Language Survey conducted by the Center for Applied Linguistics (Rhodes & Pufahl, 2010) indicated that, among US secondary schools offering languages, 4% offered Chinese in 2008, which was a 300% increase compared with the number for 1997. As to elementary schools, the number increased from 0.3% in 1997 to 3% in 2008, which means a 10-fold increase in the last decade. According to a survey of enrollment for the 2007–2008 academic year by the American Council on the Teaching of Foreign Languages (ACTFL), Chinese had the largest percentage of growth compared to other languages, increasing by 195% (ACTFL, 2011). Based on the same data, an updated report from Abbott and Wilcox (2009) points out that the number of students studying Chinese in K-12 public schools exceeded 60,000.

A concern for developing language proficiency has led to interest in more intensive forms of language education, including the immersion approach. Immersion as an innovative way of teaching a second language (L2), began in the 1960s in Montreal, Canada, to meet the needs of training English–French bilinguals. In October of 1963, in an area of Montreal called St. Lambert, a group of parents “wanted their English-speaking children to learn French” but “were dissatisfied with the teaching of the day” (Peritz, 2006) because they parents considered the traditional second language teaching methods ineffective in enabling their children to become sufficiently proficient to compete for employment, and in addition, schools for native speakers of French were

reluctant to admit large numbers of English-speaking children (Lyster, 2007). This parent-driven initiative, assisted by researchers from McGill University led by Professor Wallace Lambert, started an experiment in educating their children through a second language. Thus, a radical idea was born: implementing a program for majority-language children so that their early education would be primarily in their second language. This program was developed into what came to be known as an early total immersion program (Lambert & Tucker, 1972).

Immersion education encourages students to learn a new language by actually using the language from the very beginning. Immersion education has also been found to be beneficial to students in terms of their cognitive skill development (such as divergent thinking and problem-solving abilities developed in content courses, such as math and science) (Fortune, 2012). The idea of immersion was introduced to the US in the 1970s. The first immersion program was a Spanish program, and was established in 1971 in Culver City, California. Between 1987 and 1997, the percentage of elementary programs offering foreign language immersion education grew from 2% to 8% (Branaman & Rhodes, 1998), and 278 foreign language immersion programs were reported in 29 states by Curtain and Dahlberg (2004). The growing momentum continued, and the total number of foreign language programs constituted 11% of magnet school programs (Rossell, 2005). According to Met (2012), Chinese immersion programs have been “among the fastest growing areas of language education in American schools” (p. 5), and the last decade has seen the rapid growth of Chinese immersion programs. Before 2000, there were fewer than 10 immersion programs in Chinese in elementary schools; however, there were more than seventy programs operating by 2012 (Met, 2012). A US Mandarin

immersion school list that is based on self-reported data has revealed that, overall, there are currently 215 Chinese immersion programs (including different grade levels) in the US (Mandarin Immersion Parents Council, 2016).

An important instructional strategy for immersion education is content-based instruction (CBI). CBI is employed in classrooms “where subject matter is used at least some of the time as a means for providing second language learners with enriched opportunities for processing and negotiating the target language through content” (Lyster, 2007, p. 1). In other words, it means students learn a language other than their first language (L1) through the study of a content area, such as history, math or science. CBI comes in many different shapes, and immersion is categorized as a content-driven model of CBI (Met, 1998, 1999). In successful CBI, students are expected to master both content and language through a reciprocal process as they comprehend and express concepts through their second language. In other words, teachers focus on content but use strategies that help students improve their language skills so that students can learn content through their second language at the same time. Although most Chinese immersion programs are still in their infancy, the common goal is also to advance students’ academic achievement alongside their second language proficiency.

While the goals of CBI and immersion may seem clear, their implementation brings a number of challenges, most of which relate to the balancing of content and language. As Lyster (2007) stated, immersion and other content-based programs “have far-reaching potential to innovate, but they have not yet necessarily reached their full potential” (p. 3). Immersion students’ target language skills are developed in an unbalanced way, with comprehension skills being native-like and production skills being

limited to certain domains and lacking accuracy. Immersion teachers play an important role in achieving the potential, as they are the critical bridge between the knowledge and students. In an immersion classroom, especially a one-way immersion classroom (offering academic instruction in a language other than the majority language and targeting students of the majority language – a more detailed definition is provided in Sections 1.5 and 2.1.2) where the support for students’ native language is limited, the teacher is the primary authority and source of the target language.

The key role of the teacher in immersion classrooms is also manifested in the time allocation for different forms of activities. Research into content and language integrated classrooms shows that time devoted to whole-class activities involving teacher–student interaction tends to exceed that of dyadic or group activities involving peer interaction. For example, Lyster and Mori (2006) found that 57% of class time in Japanese immersion classrooms was devoted to whole-class activities, while French immersion classrooms devoted 70%; Salomone (1992) reported that approximately 75–80% of the time in kindergarten and 65% in Grade 2 was devoted to teacher-fronted activities. Teacher-fronted instruction is not equated with teacher lecturing or traditional teacher-centered pedagogies, and it can be an interactive process in which teachers play a mediating role and scaffold students’ learning. In combination with group and pair work in complementary ways, teacher-fronted classes can be effective in content-based classrooms (Gibbons, 2003) and immersion settings (Netten, 1991). As Gibbons (2003) stated, pedagogical inquiries should be shifted “away from the well-worn debate around traditional/teacher-fronted versus progressive/student-centered pedagogies toward a focus on the nature of the discourse itself and its mediating role in the broader knowledge

framework of the curriculum” (p. 268). Lyster (2007) also emphasized that what has been more important is the quality of the interaction and whether it contributes to the educational objectives.

With the importance of the teacher-student interaction and teachers’ mediating roles in immersion classrooms, the oral corrective feedback (CF) they provide has been a crucial topic in the literature, because it connects teaching and potential learning opportunities. During the teacher-student interaction, students may receive CF, as part of the negotiation, from teachers, when their utterances are non-target-like. Two sides may negotiate for meaning or language form due to a lack of understanding or accuracy. The CF provides students with information regarding their content, linguistic and communicative failures, which potentially helps them to “notice gaps between features of their interlanguage and the target language” and creates a “favorable environment for L2 development” (Mackey, 2012, p. 12).

1.2 Statement of Problem

As content-based programs such as immersion bearing dual goals of students mastering both the target language and the academic content, language and content integrated instructional approaches are needed. There have been repeated calls within the literature for more attention to the understanding of pedagogical interventions that integrate a greater focus on language into subject-matter instruction (Christian, 2011; Lyster & Genesee, 2013; Schleppegrell, Achugar, & Oteiza, 2004; Swain, 1995). In addition, research on outcomes of content-based language teaching has generally revealed that there is an unbalanced achievement between students’ language and content

development. Immersion students reach similar levels of academic achievement as non-immersion students. However, as to language development, they tend to gain “relatively high levels of comprehension abilities and content knowledge but comparatively lower levels of production abilities especially with respect to linguistic accuracy” (Lyster, 2011, p. 126). The imbalance means that instructional approaches investigated in the literature so far have not reached the full potential of integration. Teachers also reported challenges they encountered concerning the interface of content and language in their teaching (Cammarata, 2006; Cammarata & Tedick, 2012). Pica (2012) indicated that questions about content and language integration require more comparative and descriptive research as well as much more applied research. Mougeon, Nadasdi, and Rehner’s (2010) study of sociolinguistic competence of immersion students has pointed out a future direction: sociolinguistic variants that pose significant learning problems for the French immersion students “would need to be the object of explicit form-focused pedagogical interventions that are sociolinguistically relevant” (p. 106). In her overview of research on dual language education, Christian (2011) also pointed out that more research is desired regarding attention to language form as well as the incorporation of specific linguistic structure into academic content. Thus, an important question in content-based instruction is how second language development is supported.

An interactionist perspective of L2 acquisition (a more detailed discussion of the theoretical perspective can be found in Chapter 3), which finds solid foundation for the benefit of conversational interaction in L2 learning, argues that interaction gives L2 learners “learning opportunities during exchanges of communicative importance that contain critical linguistic information” (Mackey, 2012, p. 4). In L2 classroom settings,

interaction often involves feedback and modification of utterances as teachers and students try to understand each other in the target language. As part of conversational interaction, oral CF provided by teachers plays a role in triggering recognition of students' non-target output. The overall effect of CF on learners' second language development has been confirmed by recent comprehensive meta-analyses (e.g., Li, 2010; Lyster & Saito, 2010; Mackey & Goo, 2007).

CF is one way for teachers to integrate a focus on language into their instruction (Lyster & Tedick, 2014). Although early studies (e.g., Allen, Swain, Harley, & Cummins, 1990) found that feedback was not frequently used in immersion classrooms, more recent observations of immersion classrooms have shown a high frequency of teachers' CF. For example, French immersion teachers in Lyster's (1998) study were observed to respond to 56% of students' grammatical errors, while Japanese immersion teachers in Lyster and Mori's (2006) study responded to over 60% of students' overall errors. Since there is limited empirical research on instructional approaches to integrating language and content within the US context (Tedick & Cammarata, 2012), CF as an instructional option that can be taken by teachers to negotiate language through content is worthy of exploring in immersion classrooms.

When exploring the relationship between interactional feedback and L2 development, how learners perceive interactional feedback is particularly crucial since interaction is dynamically shaped by interlocutors' expectations, experiences and attentional focus. Recently, learners' perception of interaction has been an important research focus (Mackey, Gass, & McDonough, 2000; Mackey, 2002). Mackey (2012) has pointed out that research on the relationship between discourse and the cognitive process

is still warranted. Lyster, Saito, and Sato (2013) have called for replications of classroom studies illustrating how different instructional settings might affect CF effectiveness in comparison to previous research. There have been various classroom studies investigating the effectiveness of CF from different perspectives, including its distribution, student and teacher perception, linguistic targets and task variety, in immersion and non-immersion L2 or foreign language settings (Mackey, 2012). As Chinese immersion is a rather new educational area, it is a perfect arena for research studies on these aspects.

Having located a gap in the literature on immersion—the lack of studies examining the teachers’ use of CF and students’ responses to and perceptions of it in Chinese immersion classrooms—my research study focused on four cases of individual Chinese immersion teachers. The overarching research question of my study is: In Chinese immersion classes, how do teachers provide CF? How do students perceive CF? Specifically, the questions are as follows:

1. What type of oral corrective feedback is used in four elementary Chinese immersion classrooms?
 - a. What is the distribution of each type of corrective feedback?
 - b. How do learners respond to various types of oral corrective feedback?
2. Is there a relationship between the interactional context and:
 - a. the occurrence of teachers’ oral corrective feedback?
 - b. the learner response to oral corrective feedback?
3. How do learners perceive the oral corrective feedback in Chinese immersion classrooms?

- a. Do learners accurately perceive the corrective feedback?
- b. And is the accurate perception affected by the type of feedback and the type of recipient (direct or indirect recipient of the feedback)?

1.3 Purpose and Significance of the Study

The ultimate aim of any immersion education program is to help students become bilingual and also keep up with the learning of subject matter. Therefore, it is of paramount importance to explore how immersion teachers lead students through the process of reaching this goal and how students respond to the support from teachers. However, empirical investigations of teachers' support in L2 development through CF in immersion classrooms in the US are not as common. This study emphasizes the central role of the oral CF provided by immersion teachers as they interact with students during whole-class activities or individual support, and how students respond to the feedback, with the purpose of exploring the relationship between CF and L2 development in the context of immersion education.

Research on Chinese immersion is not yet well-developed, and there have been limited numbers of studies. Within the existing literature, much attention has been paid to the pedagogical issues on teaching linguistic features (Chao, 1993; Liu, 1992), the learning experiences of students and teacher-student interaction have been highlighted (Liu, 1992; Wang, 2008), and discussions of what makes an effective immersion program have been covered as well (De Courcy, 2002; Smith, 2007). However, none of the studies examine how teachers use CF and how students react to it. The current study contributes

to the field by providing an enriched description of feedback techniques that negotiate language through content, along with tracking students' perception during the process.

The study adds to the understandings of the interactionist approach to second language acquisition (SLA). Taking an interactionist perspective as the theoretical lens, this study interprets classroom data to examine the claims made by interactionist researchers about the function of oral CF (e.g., Long, 1996; Swain, 1995; Mackey, 2012). In addition, the study has implications for research on second/foreign language teacher education. The data from the Chinese immersion classrooms demonstrate details of how immersion instruction proceeds in different subject lessons. The outcomes of the study illuminate the understanding of second/foreign language teacher education focusing on CF as an immersion instructional approach. More specifically, the inquiry contributes to understanding what types of CF immersion teachers use, how interactional context relates to CF, as well as how the CF and students' perception of it potentially relate to their L2 development. In other words, by knowing the possible relationship between the type of CF and learner response to CF, as well as the interdependence between how learners respond to the CF and the interactional context from my study, teachers could not only adjust the CF type but also reorganize the interactional context, in order to create an optimal learning environment.

1.4 Delimitations

Even though language immersion has developed well in Europe, the focus of the literature review of this study is immersion programs in Canada and United States. However, the contributions of studies about immersion programs in Europe to the

development of the field were also under investigation. In addition, language immersion discussed in the literature review specifically refers to foreign language immersion/one-way immersion, rather than two-way immersion and the Structured English Immersion or Sheltered English Immersion—a program model for teaching English language learners in the US (different immersion models are reviewed in Section 1.5). However, studies in other language learning contexts, such as English as a second language (ESL) programs, were explored, and research about immersion in English as a foreign language in other non-English speaking countries was also included, since both are relevant to the goals of this study.

The second delimitation concerns the scope. The study is limited to immersion teachers in elementary schools and secondary schools (from kindergarten to 12th grade), excluding teachers who work in postsecondary educational institutions. Postsecondary language education tends to vary greatly from K-12 education, given the difference in educational policy, funding, age of students as well as student motivations. In addition, immersion is not usually offered at postsecondary level. However, literature on other language learning contexts at postsecondary level was included, because studies that examine CF in immersion programs are limited and most of the literature on CF focuses on in non-immersion contexts, including postsecondary contexts.

Third, the literature about CF is primarily on teacher-student interaction rather than peer interaction. However, the intention is not to avoid peer interaction but to acknowledge the importance of teacher-student interaction in the immersion context where the time of teacher-fronted activities tends to exceed that of peer activities and

where the teacher is the primary target language model for the students, at least in the early years. In addition, oral CF rather than written CF is discussed in this study.

Fourth, for the purpose of my own study, studies on both experienced teachers and novice teachers were under review. By including both experienced and novice teachers, I had a fuller picture of teaching practice, apprenticeship, and professional development.

1.5 Definition of Terms

Majority language

A majority language is the language spoken by the majority people in a given regional or national context, for example, English in the US, and Chinese in China.

Minority language

A minority language is the language other than the one spoken by the majority of people in a given regional or national context, for example, Spanish in the US, and English in China.

Immersion

According to Tedick, Christian and Fortune (2011), language immersion education falls “within the more encompassing category of bilingual education” (p. 1). There are three types of language immersion program models: one-way immersion (foreign language), two-way immersion, and indigenous language immersion. Indigenous language immersion targets language minority learners with similar linguistic and cultural backgrounds. One-way immersion programs target students of the majority language community, similar to the Canadian models mentioned above. Originating in

the US (Cammarata & Tedick, 2012), two-way immersion programs offer academic instruction in two languages, and have both English-speaking students who wish to become proficient in a second language and English language learners who need to develop academic language proficiency in English and wish to develop their native language as well (Tedick, Christian, & Fortune, 2011; Jeong & Lau, 2011). Immersion programs vary according to the amount of time dedicated to each instructional language. The 50/50 model spends equal time in the two languages, while the 90/10 model focuses more on the instruction in the foreign language in the early years with a gradual move toward a 50/50 allocation. Regardless of the variations, the main goal of both one-way immersion and two-way immersion models is to promote biliteracy, academic achievement and cross-cultural understanding (Cammarata & Tedick, 2012).

Corrective feedback

Corrective feedback, also known as negative feedback or error correction, is the information provided to learners about the ill-formedness of their target language production. CF may take place in response to learners' oral or written utterances. While written feedback is usually provided some time after the production of a text, oral interactional feedback tends to occur immediately after learners' errors during the interaction.

Perception

Perception in this literature refers to an interlocutor's recognition and interpretation of sensory information in order to understand the environment. Perception can be shaped by memory, expectation and attention.

Attention

Attention is a limited-capacity system that selects critical information for further processing. Tomlin and Villa (1994) defined it as “effortful processing that can be contrasted with more automatic and less effortful processing” (p. 187).

Noticing

Noticing is the encoding of input in short-term memory, and what is noticed may be subsequently transferred to long-term memory (Robinson, 1995). Noticing is a conscious perception, for which attention is a prerequisite (Schmidt, 1990, 1993).

1.6 Organization of Chapters

The dissertation includes six chapters. The first chapter provides general background about the origin of immersion education and its development in Canada and the US. The fact that the traditional CBI approach has led to an overemphasis on content instruction and an unbalanced development of language skills is highlighted. With this issue as the backdrop, my research purpose is specified as being related to teacher oral CF, students’ reaction to it and their L2 development.

The second chapter presents an extensive literature review relevant to this study. First, I set the conceptual foundation for the study. Specifically, I characterize the content-based instruction, identify its benefits and describe different content-based program models including immersion programs; I also point out that since immersion programs take a content-driven CBI approach, there is the risk of emphasizing content instruction at the cost of language development, such as linguistic accuracy. To address the problem, a form-focused instruction has been proposed to be embedded in CBI to raise both teachers’ and students’ awareness of the language form. CF has been identified

as a facilitative teaching practice that can potentially lead to a balance between content and language development. Second, a set of previous studies that examine teacher oral feedback in non-immersion and immersion settings are reviewed and critiqued to gain insights for my proposed study. Third, I lay out the theoretical framework for the study, which comes from the interactionist second language acquisition theories.

The third chapter discusses the methodology that was used for this study, including research design, participants, settings, and methods of data collection. Both teachers and students were involved in the study, and I utilized observations, interviews and stimulated recall to collect data.

The fourth chapter reports the research findings particularly concerning teachers' practice of CF and students' reactions to CF: the occurrence of CF, type of CF, and learner response to and perception of CF in four Chinese immersion classrooms.

The fifth chapter expands the research findings reported in the fourth chapter: incorporating teachers' perspectives about immersion teaching and discussing the results in relation to the previous studies in order to show a more nuanced understanding of the CF than the existing literature.

The sixth chapter concludes the dissertation by synthesizing the theoretical and empirical contributions of this study to the field of interactional CF and SLA, discussing practical implications to immersion education, as well as suggesting directions of future research about CF and immersion education.

Chapter 2: Literature Review

2.1 Content-based Instruction and Immersion Education

Immersion education started as a primary example of CBI, which can be found in second and foreign language instruction in Canada, and emphasizes the effectiveness of this type of instruction for language majority children who wish to add another language in school (Brinton, Snow & Wesche, 1989). The first formal immersion program, the St. Lambert in Quebec was a French immersion project established in 1965 as a well-researched experiment. The project designer believed that intensive exposure to the target language through natural communication with a native speaker was essential in order to develop high levels of proficiency in a second language. The experiment began in a kindergarten class in which English-speaking children received the regular half-day curriculum entirely in French from a French-speaking teacher. The experimental results demonstrated the success of immersion for the children' mastery of both the French language and school subjects (Lambert & Tucker, 1972). In 1971, the US followed the Canadian model and established a Spanish immersion program in California, as an alternative to traditional foreign language programs.

Brinton et al. (1989) argued that the immersion model is a carefully researched example of CBI at elementary and early secondary levels. The model demonstrates the effectiveness of instruction that focuses on teaching subject matter through the medium of a second language. Many immersion programs are content based, and the success of these programs depends largely on students' mastery of the academic content to the same degree and level as students in regular classrooms (Genesee, 1998); CBI is considered to be the foundation of these immersion programs (Tedick, Jorgensen, & Geffert, 2001).

Thus, this study particularly explores the implementation of CBI in an immersion setting. In order to gain a better understanding of the background of CBI, this literature review also includes other content-based programs, such as traditional foreign language education and different types of immersion program models. In addition, I also review the ideas of recent research that have pointed to the advantage of integrating CBI and Form Focused Instruction (FFI) in immersion education.

2.1.1 Characteristics and Benefits of Content-based Instruction

Content-based instruction is an instructional approach “in which nonlinguistic content is taught to students through the medium of a language that they are learning as a second, heritage, indigenous, or foreign language” (Tedick & Cammarata, 2012, p. S28). The origin of CBI can be connected to language immersion programs in Canada (Hardwick & Davis, 2009; Tedick & Cammarata, 2012). This approach has been promoted by many language educators (Crandall, 1993; Curtain & Pesola, 1994; Short, 1997; Stoller, 2004) because such instruction fosters academic growth in addition to language development. A detailed analysis of research provided by Grabe and Stoller (1997) shows that there is evidence that supports CBI from second-language acquisition, instructional strategies, educational and cognitive psychology, and program outcomes.

The content and language integrated approach has also been denoted by other names, such as content-based language teaching (CBLT) and content and language integrated learning (CLIL). The two terms—CBLT and CBI—are interchangeable, and are commonly used in North America, while CLIL is “a corollary to CBI” and is more common in Europe (Tedick & Cammarata, 2012, p. S29). Met (1998) provided a description of a range of CBLT settings varying from content-driven programs (e.g.,

immersion programs) to language-driven programs, which tend to refer to language classes with content used for language practice. Details of the varied program models are discussed in the next section.

Grabe and Stoller (1997) first discussed the advantage of CBI from the perspective of second language acquisition. As Curtain and Pesola (1994) have stated, natural language is learned in context, that is, natural language acquisition never occurs independently from meaning. The use of CBI provides a context for meaningful communication, as it involves regular curriculum subject matter, and it follows that language acquisition grows greatly, as students learn language best when it is used with relevant and meaningful content. Genesee (1994) has also argued that the integration of language and content in instruction is a recognition of the notion that meanings and usage of words change with context, and thus CBI is a reflection of real life language use. CBI promotes negotiation of meaning as it provides opportunities for students to discuss the content. It also allows explicit focus on contextually appropriate language forms, which reinforce both forms and meanings. CBI is also supported by Krashen's input hypothesis, which places comprehensible input in a very important position. Comprehensible input refers to the spoken and written language input that is made understandable to language learners who are exposed to it (Krashen, 1982). Krashen believed comprehensible input is the most important factor for second language acquisition, and language acquisition will not occur if comprehensible input is not present. CBI aligns with this theory in that it creates a meaningful context for learners to understand and utilize the language, therefore the language learning becomes more concrete. Grabe and Stoller (1997) also argue that CBI provides opportunities for the Vygotskian concept of the zone of proximal

development to contribute to second language acquisition. Vygotsky (1978) and some educators hypothesized that effective education gives children experiences within their zones of proximal development (e.g., things learners can do with guidance), thereby encouraging individual and independent learning. The negotiation of meaning advocated by CBI, either between teachers and students or among students, is a way of operating within the zone of proximal development and promoting language and content learning.

As for the benefits of CBI from the point of view of educational and cognitive psychology, Grabe and Stoller (1997) have made reference to Anderson's (1990) cognitive learning theory. This theory argues that skills and knowledge follow a general sequence of learning states: the cognitive stage, next the associative stage, and finally the autonomous stage. During the cognitive stage, students deal with basic problems with language they are acquiring. While in the associative stage, students' errors are corrected, they are able to make connections to relevant knowledge, and skills become proceduralized. The autonomous stage is characterized by students' performances becoming automatic, with less noticing and fewer attentional efforts. This learning cycle indicates that the presentation of coherent and meaningful information leads to deeper processing, which results in better learning. Information that has a higher amount of connections to relevant situation promotes better learning as well. In addition to the meaningful context that CBI uses to ensure the comprehension of the information being elaborated, CBI focuses on making connections to real life. This provides opportunities for students to activate their prior knowledge and leads to increased language and content learning. In addition, thoughtfully planned content-based activities can lead to optimal experiences that are intrinsically interesting and cognitively engaging.

Research on instructional strategies has shown a variety of effective instructional strategies that are encouraged in CBI classes. Crandall (1993) has stated that CBI promotes cooperative learning, which leads to improved learning. Curtain and Pesola (1994) have shown that CBI lends itself to the incorporation of teaching strategies that foster various thinking skills and learning techniques. These techniques then lead to rich language development, such as information gathering skills, analyzing skills, and generating skills. Lastly, for programs that adopt CBI, the positive program outcomes further explain the rationale for using this method. Grabe and Stoller (1997) have pointed out that “students exit the programs with improved language skills and content-area knowledge” (p. 14). A variety of CBI program models in ESL and FL K-12 contexts, post-secondary ESL, and FL contexts have shown content-based teaching leads to language and content learning with increased student motivation and interest level; this can allow for even greater employment opportunities in the future (Brinton et al., 1989; Gilzow & Branaman, 2000; Goldstein & Liu, 1994; Palmer, 1993). CBI not only results in improved learning in language and content, it also allows for great flexibility to be built in the curriculum because teachers can design the lessons based on the interests and needs of both teachers and students. An instance can be found in Short (2002) that described the Language-Content-Task (LCT) curricular model. LCT is structured around three components: knowledge of the target language (L), content area (C), and how tasks are to be completed to succeed in academic settings (T). Teachers who use LCT are encouraged to plan their lessons in a way that language, content, and tasks are attended to, both individually and interrelatedly.

2.1.2 Content-based Instruction in Divergent Contexts

CBI can be implemented in a myriad of teaching models situated in a range of contexts including elementary and secondary schools, college and universities, and programs for adult education. The context variation can also be captured with regard to the role of content. In this section, the contexts in which CBI is used will be categorized along two dimensions: the degree to which the program is driven by content or language (i.e., traditional language-oriented teaching, immersion, Sheltered Instruction Observation Protocol model, and English as Second Language content-based classrooms) and the grade level (i.e., primary level and secondary level). Postsecondary and adult education contexts will not be dealt with further.

Different program models

Traditional Foreign Language Program

Since medieval times, foreign language has been a topic in education. Traditional foreign language instruction generally starts at the elementary or secondary level. Classes usually meet two or three times a week, and taking language classes is usually a requirement for graduation in secondary schools. The grammar-translation approach to language teaching was popular during the early twentieth century. The teacher's role within this approach was to "provide vocabulary lists to students, and to explain the target language's rules of grammar" (Kinberg, 2001, p. 6). Audiolingual methods became popular in the field of language teaching in the 1950s under the influence of a behaviorist view of learning that involved imitation of native speakers of the target language (Skinner, 1957). These audiolingual methods were characterized by drill sessions and regular practice with the target language. In each teaching unit, classroom activities

consisted of reading a dialogue in the target language that was printed in students' texts, listening to it on audiotapes and practicing each line of the dialogue (Kinberg, 2001). In the 1960s, with the Chomskyan revolution in linguistics, language learning was seen as a process of hypothesis testing instead of learning responses (Chomsky, 1965). This new understanding of the way children learned was based on the assumption that "each learner constructs an individual mental representation of the target language," which promoted the idea that "successful language learning thus meant having mental representations that approximated those of native speakers of the target language" (Kinberg, 2001, p. 8). The cognitive code method is one example of an approach that developed from this perspective on language learning. It emphasizes the organization of vocabulary and rules of linguistic structure into categories, and after the categories were presented, class time was spent adding new examples to what had been learned. In the 1980s, a natural approach proposed by Krashen and Terrell (1983) greatly influenced the language teaching field. Developed from Chomsky's (1965) idea of innate syntax and Krashen's (1982) second acquisition theories, which said a second language is acquired subconsciously in a meaningful way, the natural approach assumes that comprehension in a second language precedes production and that language acquisition occurs in stages. Thus, classrooms using natural approach encouraged students to attend to meaning rather than to accuracy. Learners' affective needs were paid attention to as well.

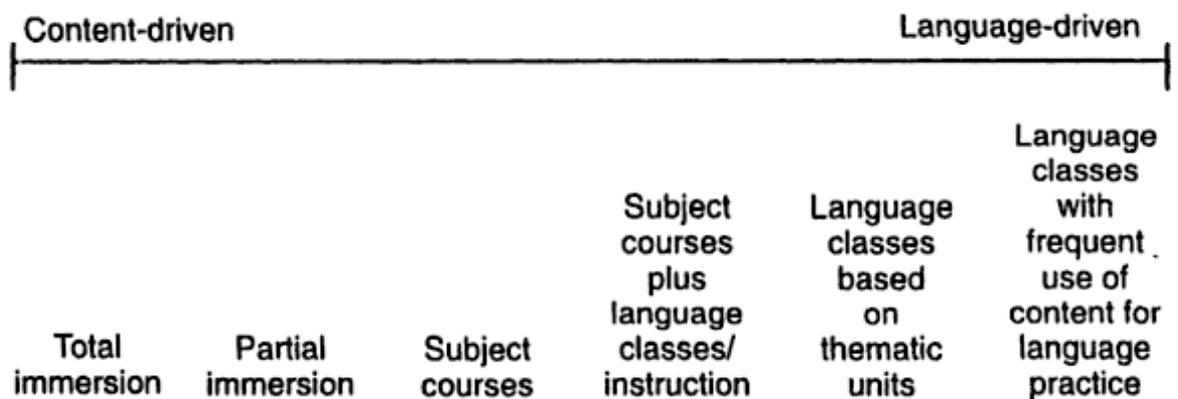
Nowadays, most foreign language programs are based on the communication-oriented approach and place the development of students' writing and speaking skills in high priority. These programs are categorized as traditional foreign language programs (TFLP) in this study. Features of TFLP that adopt CBI are as follows. First, with regard

to the syllabus, the courses are planned with specific grammatical features in mind, and the content of topics and themes is chosen to provide a context in which the grammar is taught. Second, concerning the material and task selection, teachers tend to choose materials that are authentic representations of the outside world, which provides a source for subject knowledge. Strategies are employed to allow learners to work with authentic materials. In TFLP classes, as they are not driven by content, the teacher may choose to simplify the text in order to make it more comprehensible. Third, students' interests and needs are taken into consideration (Valeo, 2010).

Immersion

Met (1998) has indicated that the wide range of settings of content-based language teaching can be described along a continuum, varying from content-driven programs to language-driven programs. TFLP falls on the language-driven end and immersion is on the content-driven side. Content-driven programs promote language development through subject matter learning and assess both content knowledge and language proficiency (Lyster & Ballinger, 2011).

Figure 1 Continuum of immersion programs



Note. Reprinted from “Curriculum decision-making in content-based language teaching”, by Met, M., 1998, In J. Cenoz & F. Genesee (Eds.), *Beyond bilingualism: Multilingualism and multilingual education*, p. 41, Clevedon, UK: Multilingual Matters.

Immersion programs can be categorized according to different variants. One categorization is based on the amount of class time spent for in the foreign language: total immersion and partial immersion. In total immersion programs, 90% to 100% of class time is spent in the foreign language. All content courses are taught in the second language or foreign language, and language learning *per se* is incorporated through the curriculum. English language arts may not be introduced until Grade 2 or Grade 5. Some English-medium instruction may be included, such as for special subjects like physical education and art classes. In partial immersion, about half of the class time is spent on learning subject matter in the target language. The goals of this type of immersion are similar to those of total immersion, which are to become functionally proficient in the target language and master the content, as well as to understand and to appreciate other cultures.

The second factor of categorization is the composition of students. Two-way immersion provides content and language integrated instruction for native English speakers and native speakers of the target language (approximately 50% English native speakers and 50% native speakers of the target language), with the goal of promoting high academic achievement, first and second language development, and cross-cultural understanding for all students. Alternatively, students in one-way immersion programs are all learners of the same target language and all speak the same first language, for the most part. One-way immersion programs are designed for language majority students, although increasingly one-way immersion classrooms are “populated by learners who may not share the same home language though they often know the majority language of the community” (Cammarata & Tedick, 2012, p. 252). Although some students’ native

tongues are not one of the two languages included in the one-way immersion program, these situations are not then categorized as two-way immersion programs. In this case, bilingualism and biliteracy are still principal aims of the one-way programs. The third form of categorization depends on the age of students. There are early immersion and late immersion programs, with the former beginning with students who are at the age of 5 or 6 and the latter beginning when students are older than 11. As the age factor is related to another type of CBI context, details will be discussed in the following section.

ESL content-based classes and SIOP

English as a second language (ESL) content-based classes refer to self-contained content classes designed for English language learners. These classes are usually taught by dual-certified teachers to ensure that students develop academic language skills. Similar to ESL content-based classes, the Sheltered Instruction Observation Protocol (SIOP) model falls on the content-driven side of the CBI continuum and was developed for English language learners. The SIOP model is a research-based instructional model that has proven effective in improving English language learners' academic performance while acquiring English language proficiency. The model incorporates features of effective teaching for all students (such as cooperative learning and differentiated instruction), and it also includes features particularly designed to promote the academic success of English language learners, such as the inclusion of language objectives in content lessons (Echevarria, Vogt, & Short, 2004). The model has also been adapted for two-way immersion education as Two-way Immersion Observation Protocol (TWIOP) (Howard, Sugarman & Coburn, 2006). The main purpose of both SIOP and TWIOP is to deliver subject matter in a way that is accessible to two groups of learners, namely

English native speakers and English language learners (SIOP classrooms may be all ELL or mixed). This differs from the purpose of CBI in one-way immersion classrooms, which attends to students having the same level of needs in terms of the academic language and content. However, the way that the SIOP model has used to enhance the academic literacy of English second language learners can be insightful to teaching English native speaking students who want to learn another language.

Different grade levels

There has been a myth that learning content in a language other than the home language at an early age has a negative effect on children's language proficiency and academic performance, such as feeling confused by the two languages and being unable to comprehend the content. Nevertheless, a language test comparison performed as early as 1978 showed results that refute this claim. Swain's (1978) study compared students from an early French total immersion program, a late partial French immersion program, and an early partial French immersion program to unilingual French students, and found that the score of the early total immersion group was nearly identical to unilingual French students while there was a significant difference between the scores of the late immersion group and their unilingual francophone peers. According to this study, the most positive language results were produced in early total immersion programs, where content and language integrated instruction begins in kindergarten or Grade 1.

According to Fortune and Jorstad (1996), there were more immersion programs at the elementary level than those at the secondary level, and this trend has been maintained throughout the years. The 2011 *Directory of Foreign Language Immersion Programs in US Schools* includes 152 immersion programs at the preschool level, 133 at the

elementary school level, 23 at the middle school level, and 46 at the high school level (Center for Applied Linguistics, 2011). There is overlap among these programs, as some programs include multiple levels, such as preschool, elementary school and middle school in a single program. In other words, many middle school and high school programs are continuation programs for children moving on from early immersion programs.

The greater prevalence of immersion programs in lower grade levels partly results from schools having too many curricular, staffing, and scheduling challenges to include immersion programs at higher grade levels (Lenker & Rhodes, 2007). The availability of teaching materials is always an issue for secondary school immersion teachers due to the small student population in various immersion languages at this level across the nation. Garcia (1998) has detailed how secondary immersion programs tend to result in dissolution and disappearance: there are often scheduling conflicts that force students to choose between “activities that interest them and activities that they need to continue their language growth” (p. 48); target language related reading/software/video materials are not in stock in the library or media center; and the size of the facility gives the program a sense of dysfunction. As most secondary programs are continuations of elementary programs, student attrition occurs, leaving fewer students in the immersion strand as they move into higher grades. For immersion students who are placed in a regular middle school, isolation is their common experience due to various issues and their small numbers. The feeling of isolation is also experienced by immersion teachers in secondary schools “where the immersion program becomes a strand within a much larger, English-medium school” (Cammarata & Tedick, 2012, p. 259).

2.1.3 Outcomes of Immersion Education

Earlier studies of immersion programs (Lambert & Tucker, 1972; Swain & Lapkin, 1982) showed consistent and positive results regarding first language development and academic achievement. Results of a more recent study by Turnbull, Lapkin, and Hart (2001) also had similar findings. From the social-psychological perspective, immersion students have positive perceptions of cultural identity and a sense of ethnic group membership, achieving the goal of additive bilingualism promoted by bilingual education. In addition, immersion students tend to develop more positive attitudes towards the second language and its native speakers and perceive less social distance from native speakers (Genesee, 1987).

In terms of the outcomes of target language development, immersion students develop much higher levels of proficiency than non-immersion students studying the second language in TFLPs (Lyster, 2007), regardless of program type. However, the comprehension skills and production skills are developed in an unbalanced way. According to Harley, Cummins, Swain, & Allen (1990), immersion students typically develop native-like comprehension skills (measured by tests of listening and reading comprehension) while their production skills (measured as grammatical accuracy, lexical variety and sociolinguistic appropriateness) are non-native-like but reach higher levels of fluency than non-immersion students. In particular, immersion students tended to learn academic registers without acquiring vernacular features and other informal variants that might otherwise facilitate more authentic language production (Tarone & Swain, 1995). Harley (1992) indicated that there also has been a tendency for immersion students to use vocabulary limited to domains experienced in school and to overuse simple high-

coverage verbs. A set of French immersion studies revealed immersion students' non-native-like uses of grammatical features including prepositions (Harley et al., 1990), object pronouns (Harley, 1980), word order (Selinker, Swain, & Dumas, 1975) and grammatical gender (Harley, 1998).

2.1.4 Integration of Content-based Instruction and Form-focused Instruction

The unbalanced development of target language skills indicates that the integration of language and content in immersion programs is “far from a *fait accompli*” (Lyster, 2007, p. 25). Early studies examining the French immersion programs in Canada identified shortcomings that unless compensated for, restrict the effectiveness of CBI. Swain and Carroll (1987) stated a general observation about the immersion classes, indicating that “the form and function are kept surprisingly distinct” (p. 191). Swain (1988) found that content instruction did not invite profound student language production.

Immersion education in the US has faced similar questions. In their investigation of three immersion teachers' lived experience of attempting to balance content and language instruction, Cammarata and Tedick (2012) reported that teachers found it difficult to focus enough time on both content and language to allow students to digest the content and meanwhile develop language growth. Clear expectations in terms of content coverage imposed on immersion teachers tend to bring significant pressures to teachers as well, and this pressure may prevent them from attending to language instruction in class. In addition, limited resources have led to more work for immersion teachers in terms of balancing content and language in instruction. There has been an absence of support in the form of materials “specifically designed to integrate language and content, clear language standards, curricular roadmaps, and professional programs

designed to meet the unique needs that immersion teachers have” (p. 259). Furthermore, limited attention was given to the immersion language development at both the program level and the district level. Students’ second language proficiency is seldom assessed at the classroom or program level.

Cammarata and Tedick (2012) have portrayed the nature of the difficulty of integrating language and content instruction as “a stab in the dark”, which means immersion teachers struggled to find the exact language they needed to teach. To be specific, it was difficult for them to identify “what language to focus on,” figure out “how and when to integrate that language in the context of content instruction,” and decide “how to follow up on the language in their assessment strategies” (p. 261). Furthermore, they explained that immersion teachers identify themselves as both content teachers and language teachers, though they were unaware of the requirements for pure language teaching, such as grammatical structures and morphological rules, and they lack pedagogical knowledge when it is linked to language.

Genesee (1987), Snow (1987), and Swain and Lapkin (1982) all note that the process of teaching and learning language through content is in some ways “incidental.”

Snow (1987) interpreted “incidental” as follows:

A key feature of immersion education is that language learning occurs through the vehicle of content instruction. There is little or no explicit, or formal teaching of the second language compared to other more traditional foreign language teaching methods. Thus, incidental learning is a feature of the model, but is not to be interpreted in a more general way as “casual” or “haphazard.” On the contrary, in the actual delivery of instruction, language teaching aims can indeed be very purposeful. (p. 5)

However, CBI that only alludes to language incidentally falls short of fully fledged integration. As Harley (1994) has commented, CBI with incidental focus on language

provides substantial exposure to contextualized language use but does not ensure the learning of less salient yet crucial morphosyntactic features of the target language, which is a crucial component. Lyster (2007) also argued that “much incidental attention to language is too brief and likely too perfunctory to convey sufficient information about certain grammatical subsystems” (p. 27).

Given the unbalanced outcomes of immersion programs between content and language, Stern (1990) added “analytic” and “experiential” instructional options as complementary to CBI, in order to more effectively integrate language and content. He characterized analytic strategies as those that emphasize accuracy and focus on aspects of the linguistic code, such as phonology, grammar, functions, discourse, and sociolinguistics. Experiential strategies entail non-language themes and topics as content and engage students in purposeful tasks. This instructional option emphasizes the conveyance of meaning, fluency over accuracy, and authentic use of the target language. He recommended more systematic integration of analytic strategies in contexts of immersion and increased emphasis on experiential strategies in traditional programs in which the target language is taught as a subject.

In a series of research works, Lyster has explored how the dichotomous view of analytic and experiential instructional options can be diffused to ensure a complementary integration of both (Lyster, 2007; Lyster, 2011; Lyster, 2013; Lyster & Mori, 2006). He proposed to integrate content-based instruction with form-focused instruction through a “counterbalanced” approach in immersion education. The beginning of the definition and operationalization of form-focused instruction (FFI) can be traced back to Long’s categorization of language teaching options into focus on meaning, focus on form and

focus on forms (Long, 1991, 1996). Focus on meaning corresponds to CBI. A common example of the focus on form category is the provision of CF in response to learners' erroneous utterances, while an example of focus on forms is traditional grammar instruction in which explicit rules about language are taught (Loewen, 2011). Based on Long's work, Spada (1997) provided her frequently cited definition of FFI as "any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly. This can include the direct teaching of language (e.g., through grammatical rules) and/or reactions to learners' errors (e.g., corrective feedback)" (p. 73). Ellis (2001) further divided FFI into three categories: focus on forms, which encompasses traditional structural approaches to instruction; incidental focus on form, which involves brief and spontaneous attention to language items during communicative activities; and planned focus on form, which consists of attention to preselected language items during communicative activities.

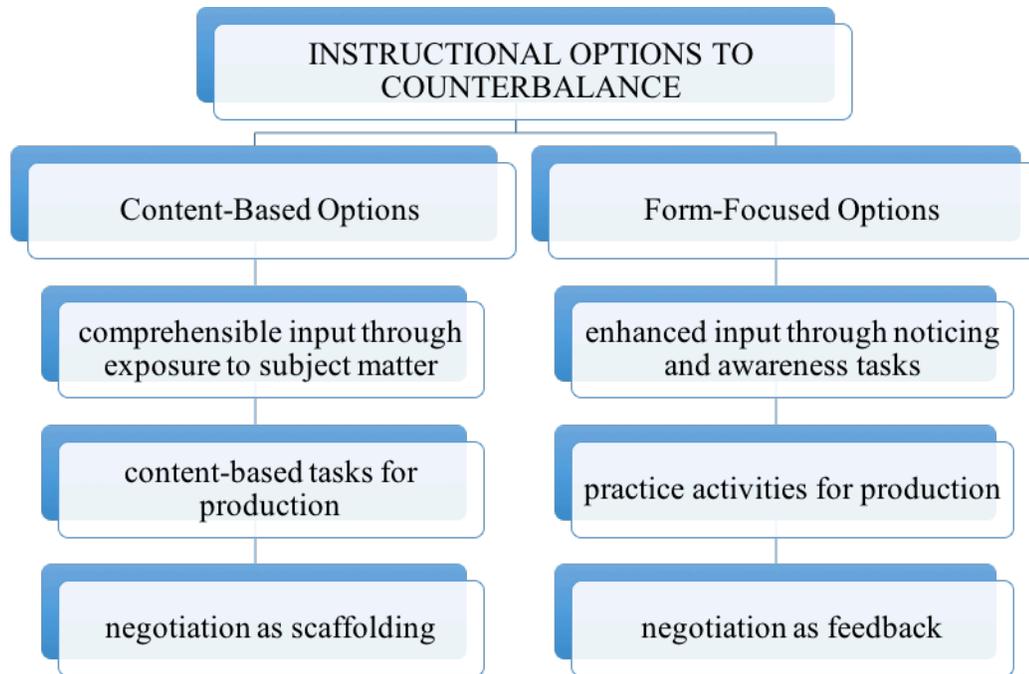
Opposing opinions of FFI are present, with many focusing on its effectiveness. One item of criticism of FFI is that too much attention to linguistic items stops learners from developing proceduralized and implicit L2 knowledge (Krashen, 1982; Schwartz, 1993); while others argue that focus on form does not provide enough attention to language and has not lived up to its claimed effectiveness (Sheen, 2003, 2005). In spite of criticisms, the consensus that FFI can be beneficial to L2 learning has grown. FFI is generally considered to be most effective in communicative contexts. According to Spada and Lightbown (2008), "the most engaging questions and debates in L2 pedagogy are no longer about whether CLT [communicative language teaching] should include FFI [form focused instruction] but rather how and when it is most effective" (p. 184). In the context

of immersion teaching, Lyster's counterbalance hypothesis claims that a counterbalance of FFI and CBI can promote continued second language growth by making learners shift their attentional focus in a way that balances their awareness of learning both content and language.

Lyster (2011) explained he utilized *The Oxford English Dictionary's* definition of counterbalance, "a power or influence that balances the effect of a contrary one" (Brown, as cited in Lyster, 2011), to bring a new perspective to the paradoxical endeavor of learning and teaching language through content. A counterbalanced approach facilitates continued second language development by orienting learners in the opposite direction to which that their classroom environment has accustomed them. In other words, instruction requires learners to vary their attentional focus between the content to which they usually attend in classroom discourse and target language features that are not otherwise attended to. This approach facilitates the destabilization of interlanguage forms. This is because the effort that is required for learners to shift their attention systematically to language form in a meaning-oriented context is predicted to leave traces in memory, which affect the underlying interlanguage system. The counterbalanced approach mainly proposes that teachers can rely on content-based and form-focused instructional options in content-based classrooms such as immersion. Specifically, content-based options include techniques that teachers use to make content comprehensible to students, academic tasks to create opportunities for students to use the target language to mediate content learning, and negotiations to scaffold verbal exchanges with students through questions and feedback for the purpose of engaging students in the appropriation of the targeted content. Form-focused options include noticing and awareness activities that make input

features salient, production activities that facilitate the proceduralization of the target language, as well as negotiations replete with feedback that push students to take ownership of their learning (Lyster, 2007). Figure 2 demonstrates the key components of pedagogy for teaching language through content.

Figure 2 Instructional options to counterbalance



Note. Adapted from “Learning and teaching languages through content: A counterbalanced approach”, by Lyster, R., 2007, p. 135, Philadelphia, PA: John Benjamins Publishing Company.

In summary, this instructional approach proposed that immersion and other CBI classroom teachers need to counterbalance CBI and FFI across three key areas of pedagogy: instructional input, student production and classroom interaction. Lyster also added that the content-based and form-focused options appear discrete in Figure 2, however, they are expected to interact with one another “in dialectical fashion and in complementary ways” (p. 134). The implementation effect of the counterbalanced approach needs further investigation. Nevertheless, either the traditional CBI or the CBI

that is balanced by FFI has been based on effective classroom interactions. Classroom interactions, especially the teacher-student interaction, is of the paramount importance in immersion programs, as it bridges the interactional input and the student production. Teachers' use of feedback is an integral part of teacher-student interactions, which aim to promote student learning, and thus is deserving of further investigation.

2.2 Corrective Feedback

Ellis (2006) defines corrective feedback as “responses to learner utterances containing an error” (p. 28). CF plays an essential role in the support teachers need to provide to students to improve their content and L2 development. In immersion settings where students bear two learning loads (i.e., language and content), teacher support is exceptionally important because the mastery of the academic content and negotiation of language through content require a great deal of teacher guidance and assistance. Supplying students with CF is a path that immersion teachers can take to guide learners to be aware of the gap between their interlanguage and target language, out of the communicative and meaningful context. In this section, I review the research about the type, frequency, and effectiveness of CF in order to present an overall picture of CF in classroom settings.

2.2.1 Type

Lyster and Ranta (1997) identified six types of CF on the basis of detailed analysis of teacher-student interaction in French immersion classrooms:

Explicit correction: clearly indicating that the student's utterance was incorrect, the teacher provides the correct form;

Recast: without directly indicating that the student's utterance was incorrect, the teacher implicitly reformulates the student's error, or provides the correction;

Clarification request: the teacher indicates that the message has not been understood or that the student's utterance contained some kind of mistake and that a repetition or a reformulation is required;

Metalinguistic clues: without providing the correct form, the teacher poses questions or provides comments or information related to the formation of the student's utterance;

Elicitation: the teacher directly elicits the correct form from the student by asking questions, by pausing to allow the student to complete the teacher's utterance or by asking students to reformulate the utterance;

Repetition: the teacher repeats the student's error and adjusts intonation to draw student's attention to it.

Ranta and Lyster (2007) subsequently classified the six types into two broad categories: reformulations and prompts. Reformulations provide students with the correct model of their non-target output, while prompts do not provide the correct model but instead signals the mistake, which can lead learners to self-correction. Reformulations include recast and explicit correction, and prompts include elicitation, metalinguistic clues, clarification request, and repetition. Sheen and Ellis (2011) include paralinguistic signals in the classification, having previously been under-researched, into the classification. Through paralinguistic signals, teachers attempt to elicit correct forms from students in a non-verbal manner. In addition, they subdivide recast into conversational and didactic recasts. Conversational recasts reformulate student utterances

in order to resolve a communication breakdown and often take the form of confirmation checks. Reformulations of student utterances when there is no communication problem are didactic recasts.

2.2.2 Frequency

The frequency of the usage of different types of CF reveals how teachers use CF in a descriptive manner. Previous studies have documented the frequency of different types of CF in various instructional contexts including FL classrooms, EFL and ESL classrooms, and immersion classrooms. An overview of classroom observational studies that examine the frequency can be found in Lyster, Saito, and Sato's (2013) review article, which lists results of 12 studies. Overall, teachers tend to provide CF regardless of the instructional context. For example, Lyster and Ranta (1997) found 62% of students' errors were corrected (elementary French immersion in Canada), Lyster and Mori (2006) found 61% of student turns with error were provided CF (elementary Japanese immersion in US), and Tsang (2004) found 77% of student errors received CF (high school EFL in Hong Kong). In general, explicit correction occurred least in the majority of contexts (11 out of 12), whereas recasts have been most frequently used in most cases (7 out of 12) and across a range of instructional settings. The pervasiveness of recasts has been confirmed by many other researchers (e.g., Gor & Long, 2009; Mackey, 2012; Milla & Garcia Mayo, 2014). A few other studies have also shown the high frequency of recasts in different settings: elementary immersion classrooms in the US (Mori, 2002), in Canada (Lyster & Ranta, 1997), and in Korea (Lee, 2007); high school EFL classrooms in Hong Kong (Tsang, 2004); university-level foreign language classrooms in Australia (Doughty, 1994) and in the US (Roberts, 1995). However, Lyster, Saito and Sato (2013) stated that,

“although many reviews of CF (corrective feedback) research claim that recasts are the most frequently used type of CF, it is important to note that this not necessarily the case across all instructional settings that have been observed” (p. 7). Therefore, it is worth examining the distribution of each type of CF in Chinese immersion classrooms.

2.2.3 Effectiveness

There has been a theoretical debate about the usefulness of CF. One line of argument (e.g., Krashen, 1985; Schwartz, 1993; Truscott, 2007) claims that second language acquisition results solely from comprehensible input with positive exemplars and correction is unnecessary or even harmful. Other researchers argue for the benefit of CF and mounting evidence can be found to justify the effectiveness from various perspectives. Cognitive-interactionists such as Gass (1997) and Long (2007) are against the sufficiency of comprehensible input and emphasize the importance of both positive evidence and negative evidence afforded through CF. Schmidt (1990, 1993, 2001) believes that second language acquisition is conscious and noticing is essential. The negative evidence in particular helps learners to notice their non-target-like output. Learners’ immediate response (repair or query about the linguistic form) to CF, is another indicator of the effect of CF in second language acquisition, because both the learner repairing an error and querying about the linguistic form are facilitative in L2 learning (Sheen, 2006). More details about the theoretical support for CF can be found in Section 2.4.

With the theoretical establishment of CF, empirical research studies also provide a strong support. Both laboratory and classroom studies show positive results on the effectiveness of CF. Effectiveness of recasts has been the focus of many laboratory

studies in which positive effects for recasts on L2 development are found in comparison to controlled groups receiving only models or no CF at all (e.g., Long, Inagaki, & Ortega, 1998; McDonough & Mackey, 2006). Recast effectiveness has also been discussed in relation to the individual differences and a range of linguistic, cognitive and contextual constraints. Mackey and Philp (1998) found that for advanced adult learners, interaction with intensive recasts was more effective than with fewer recasts. Mackey, Philp, Egi, Fujii and Tatsumi's (2002) study revealed recast effects are more positive with learners of high working memory capacity. There is some evidence to show the linguistic target of the recasts "influence whether recasts result in uptake with repair or facilitate acquisition" (Ellis & Sheen, 2006, p. 597). For example, Ortega and Long (1997) have found that recasts help the learning of adverb placement but not clitic pronouns, and Leeman (2003) has pointed out that learners benefit more in Spanish number agreement than in gender agreement.

Based on several review studies (e.g., Lyster, Saito, & Sato, 2013; Sheen, 2011) and meta-analysis studies (e.g. Li, 2010; Lyster & Saito, 2010) in recent years, classroom studies of CF have also consistently confirmed that instruction with oral CF is more effective than when there is no CF. Saito and Lyster (2012) found recasts were more effective for improving pronunciation of familiar items. Doughty and Varela's (1998) study compared two content-based ESL classes, one receiving corrective recasts during production activities and the other engaging in the same activities without any CF. Results indicated that the class that received feedback gained significant short-term and long-term improvement. Takashima and Ellis (1999) tested Japanese learners of English

on their performance with English past tense, and found significant positive effects on learners who received prompts than those who did not.

Similar to laboratory studies, recasts are the focus in classroom studies.

Classroom recasts have been compared with other types of CF, particularly prompts. In Lyster and Saito's (2010) meta-analysis of 15 classroom studies of CF, it was found that recasts, prompts and explicit correction all positively affected learners' L2 development, whereas prompts worked more effectively than recasts, and the effects of explicit correction could not be distinguished from those of recasts and prompts. Lyster and Saito (2010) explained that classroom learners "seem to benefit even more from the negative evidence available in prompts and from the greater demand they impose for producing modified output" (p. 289). Different results came from Mackey and Goo's (2007) meta-analysis study, which found larger effects for recasts. However, Mackey and Goo (2007) included both laboratory studies (15) and classroom studies (5), and the research setting had a major influence on the differing results.

While the conflicting findings indicate the need for more research, there are several things that need to be taken into consideration when examining the effects of different types of CF. First, in spite of the research setting, different operationalizations and coding schema for feedback, sample sizes, and methodologies can all be the source of the varying results. Second, the interactional context of the exchanges where feedback occurs is another important variable but is under-researched. For example, the results of Oliver and Mackey's (2003) classroom study showed teachers were most likely to give feedback in exchanges that focused on both explicit language and content, and students were most likely to use feedback in exchanges that focused on explicit language. Third,

the controversy about the the effects of recast also involves with the ambiguity of recasts. It has been argued that classroom recasts are a source of linguistic ambiguity (Lyster, 2004, 2007), because students could be confused by the mixing of recasts and non-corrective repetition, particularly in content-based classrooms where there is ubiquitous use of non-corrective repetition to confirm students' message. In other words, students might have difficulty in perceiving the corrective intention of recasts provided by teachers. Nevertheless, a few other studies have proven the noticeability of recasts (e.g., Carpenter, Jeon, MacGregor, & Mackey, 2006; Mackey, 2006; Mackey, Al-Khalil, Atanassova, Hama, Logan-Terry, & Nakatsukasa, 2007).

2.2.4 Age

There is limited L2 research on teacher feedback that relates to students' ages. Johnson and Jackson (2006) compared guidance by trainers in non-linguistic skill areas. They described the nature of pre-task instructions in child classrooms compared to those provided in adult language classrooms but have said little on the effects of on-task feedback and guidance. Oliver, Philp and Mackey (2008) compared effects of teachers' guidance by investigating the instructions they provided to both younger (6-7 years) and older children (11-12 years) on three conditions: pre-task instructions, pre-task instructions plus examples, and pre-task instructions plus on-task feedback and examples. Their research results showed that the three conditions did not result in significant differences in children's interaction as measured by non-target-like turns, the opportunity for, or the provision of feedback. However, as for the production of modified output, the teachers' input had an effect according to age. In particular, while on-task examples and

feedback were not helpful for the production of modified output for younger children, they were very helpful for older children.

2.3 Focused Review of Studies on Corrective Feedback

The previous sections described the overall conceptual framework, including empirical evidence regarding CF and content and language integrated teaching. The current section describes in detail the focus of empirical studies on the CF in classroom settings in order to set a theoretical and methodological foundation for this study. For this purpose, this section presents a critical review of previous inquiries into CF, with a focus on descriptions of CF in classrooms, the relation between contextual factors and CF, as well as learner perceptions of CF. In particular, I synthesize and critique the conceptual and theoretical frameworks and methodological issues. Additionally, I interpret results of relevant studies on CF in a variety of settings, including immersion and other content-based classrooms, as well as non-content-based language driven classrooms.

2.3.1 Corrective feedback across instructional contexts

Lyster and Mori (2006) conducted a study of comparative analysis, which compared two different instructional settings: French immersion and Japanese immersion. The study investigated three types of feedback: explicit correction, recasts, and prompts. On the basis of previous research, Lyster and Mori (2006) believed that recasts and prompts are most frequent types of feedback used by the teacher in immersion classrooms. The study examined learner uptake, which has been defined as students' immediate response to the CF. Learner uptake includes "utterances still in need of repair" or "utterances with repair." Repair refers to utterances including "repetition or

incorporation of the correct forms provided in recasts and explicit correction” and “self- or peer-repair following prompts” (p. 273). Having established the focus of the study, Lyster and Mori (2006) formulated the following research questions:

1. What is the distribution of different types of interactional feedback in French and Japanese immersion classrooms?
2. What is the distribution of uptake following different types of interactional feedback in French and Japanese immersion classrooms?
3. What factors contribute to similarities and differences in the occurrence of feedback, uptake, and repair across these two instructional settings?

(p. 277)

Both settings were content-based, integrating a theme across instruction of all subject-matter. The French immersion data used in the study came from four classrooms in Lyster and Ranta (1997) in Canada: three were Grade 4 classrooms and the other was a split Grade 4/5 classroom. They were different immersion programs, one being an early total immersion program and the other three being 60% immersion programs. Interaction in the classrooms was audio recorded, and there were 27 lessons that totaled 18.3 hours, including 13 French language arts lessons and 14 subject-matter lessons (i.e., science, math, social studies). The Japanese immersion data were from three classrooms that were included in Mori’s (2002) study in the US. Two classrooms were Grade 4 classes taught by the same teacher and another one was a Grade 5 class taught by two teachers. All three classes were part of an early partial immersion program in the same school. Interaction in the three classrooms was both audio and video recorded, and there was a total of 14.8

hours of lessons, consisting of Japanese language arts lessons, subject matter lessons, and other activities.

The results demonstrated that teachers used feedback in similar patterns in the two settings: recasts were the most frequently used type of feedback (54%-65%), prompts were the second most common type (26%-38%), and then followed by explicit correction (7-9%). As for the uptake and repair following different types of feedback, different patterns occurred in the two settings: students in the Japanese immersion classrooms responded to feedback more frequently (more uptakes observed) and more accurately (more repairs observed) than students in the French immersion classrooms did. Generally, in the Japanese setting, the greatest proportion of uptake and repair was observed following the recasts. On the other hand, most uptake and repair appeared after prompts in the French immersion classrooms. Lyster and Mori (2006) explained an emphasis on accurate oral production contributed to the effectiveness of recasts in eliciting student uptake and repair, in that oral production activities involving repetition of teacher models were likely to “prime students for repeating teachers’ recasts” (p. 291). The researchers also speculated on two additional factors that predisposed students in Japanese immersion classrooms to develop greater awareness of recasts. One factor was the greater difference in language structure and typology between Japanese and English than between French and English. The second factor was the different social environments in which the two programs were set. Students in Canada are more likely to be exposed to French language, whereas as Japanese immersion students tend to have negligible exposure to Japanese outside the classroom. This might result in the French

immersion classrooms being more meaning-focused and Japanese immersion settings more form-focused.

As the Lyster and Mori's (2006) dataset came from two different research studies, more factors could have contributed to the different abovementioned results in the two instructional settings. In addition to the difference in social settings and language structures, the time interval between the two studies is five years, which presents a long enough duration that might have affected the data. First, teacher training varies at different time periods; it is likely that more recent immersion teachers have been trained to pay more attention to the language form besides the communicative function. Second, curriculum design changes over time and nations; distinctive objectives of curriculums that guide the teaching in the two settings result in different trainings for students, and thus might lead to different responses to recasts and prompts.

The focused examination of the most common types of feedback in Lyster and Mori (2006) provides a multifarious portrayal of teacher-student interaction in immersion settings. In addition, Lyster and Mori (2006) presented one of exceptional studies that directed the attention not only to the student responses to different types of feedback in the immersion settings, but also to the factors behind commonalities and differences. These factors connect both pedagogical and social features to CF and second language development in the content-based settings and have also been indicated by Mackey (2012) to be a major direction of future research. This leads me to wonder how Chinese immersion might differ from the two settings in this study, since there has not been any research study that examines CF in the context of Chinese immersion.

Gibbons's (2003) study explored teacher-student talk in elementary ESL science classrooms based on the constructs of *mediation* from sociocultural theory and *mode continuum* from systemic functional linguistics. Gibbons (2003) considered scaffolding as a form of mediation. Mode continuum was used to describe the different orders of discourse, and mediation involves "communication between two orders of discourse: the current levels of learners' knowledge and L2 abilities, and the broader knowledge and specialist language of the science community into which the students are being apprenticed" (p. 250). Positioning the study in this framework, Gibbons (2003) focused on how teachers supported students in developing "spoken but less context dependent language as a way into gaining control of the more formal and often written registers of the curriculum" in content-based classrooms (p. 253). The purpose of the study was to identify factors in classroom discourse that affect language development and to theorize it through language teaching instances.

The data of the study came from a larger project that was conducted in two ESL classes in the same Australian school with a total of sixty 9-year-olds and 10-year-olds. The two teachers had experience in ESL education and included the teaching of language across the curriculum in their planning. The researcher observed one complete unit of teaching, containing 7 and 11 lessons in two classes. The topic of the unit that was included in the research observation was magnetism, and the teaching was planned around three stages. For the first stage, students carried out a number of experiments in groups. In the second stage, each group shared their learning in the experiment with the whole class, taking the form of *teacher-guided reporting*, during which time the groups of students shared their learning with the whole class with assistance from the teachers.

In this stage, teachers and students co-constructed the more formal register of the subject. In the final stage, teachers helped students determine common findings to build up generalizations. The data for the study came from audio recordings, field notes, and interviews with teachers and students as well as environmental print around the classroom. The data were analyzed at two levels: the first level of analysis took a holistic perspective on the entire data, such as indicating the kind of activity and where it fell on the mode continuum; the second level of analysis identified a set of themes that emerged on the basis of the first level.

Gibbons' findings showed that the teachers' mediating role was central to making students overcome linguistic difficulty. Students' spoken involvements in the classroom discourse were transformed into specialist discourse of curriculum through teachers' mediation. In particular, teachers mediate language development in following ways: mode shifting through recasting, signaling to learners how to reformulate, indicating the need for reformulation, and recontextualizing personal knowledge.

One of major contributions of Gibbons' (2003) work, which is pertinent to my study, is the the identification of four techniques that the teachers used during the teacher-guided reporting stage to help the students reconstruct their experiences and develop shared understandings through language: recasting, signaling how to reformulate, indicating a need for reformulation, and recontextualizing personal knowledge. Gibbons did not term them as CF, but the first three techniques can be considered as CF techniques. According to Gibbons, recasting was used by the teacher to make a shift to a more scientific register, like in the following example (p. 260):

T: OK can you then tell me what you had to do next?

S: *when we had em the things the first one like if you put it up in the air like that... the magnets you can feel. Feel the em... that they're not pushing?*
 T: *when you turn the magnet around? you feel that*
 S: *pushing and if we use the other side we can't feel pushing*
 T: *OK so when... they were facing one way... they/you felt the magnets attract and stick together/ when you turn one of the magnets around you felt it... repelling... or pushing away... OK thank you well done Charbel.*

The teacher in the example above reformulated the student's use of "pushing" and "not pushing" into "attract/stick together" and "repelling/pushing away." The latter forms, which are stylistically more appropriate, were the focus of the lesson. Gibbons (2003) described the use of recasting as "an ongoing process of recapping by the teacher, who re-presents or recontextualizes learners' experiences and the events they are talking about in a way that fits the broader pedagogic objectives of the curriculum" (p. 257). According to Gibbons (2003), signaling how to reformulate can stretch the language resources while encouraging students to persevere in using the target language to produce emergent knowledge with increasing refinement. The following example shows that the teacher used an elicitation move to indicate that a reformulation was necessary— "let's start using our scientific language," which leads to longer and more complete learner discourse.

T: *tell us what you found out*
 S: *we found out that the south and the south don't like to stick together*
 T: *now let's/let's start using our scientific language Michelle*
 S: *the north and the north repelled each other and the south and the south also... repelled each other but when we put the/ when we put the two magnets in a different way they/ they attracted each other.*

p. 263

Describing the building of linguistic bridges between learner language and the target register contributes to an understanding of what constitutes effective interaction in a context where new ways of using language are also constructing new content

knowledge. In other words, the study sheds light on effectively helping students to negotiate formal and domain specific language through subject learning, which is integral to any content-based classroom. Particularly, Gibbons (2003) highlighted the importance of contingency to such teacher-student interaction: teachers' way of judging the need for and quality of assistance as required by the students based on the moment-to-moment understanding.

There is a constraint for Gibbons' (2003) findings in that the study is based primarily on the observation of the *teacher-guided reporting* stage. Deeper insights could have emerged from the study if it had capitalized on all of the data sources including interviews with teachers and students as well as students' work. Individual interviews with the two teachers could reveal teachers' reflection on their moves during interactions with students, so as to elucidate the factors that influence their judgment of students' needs. Additionally, the study claimed to investigate how teachers assisted students' spoken academic language development as a way into gaining control of written registers of the curriculum that may be more formal, thus students' written work could be another source of evidence showing the influence of teacher support on the advancement of students' academic language skills in written form.

With the assumption that feedback is valuable in interactions toward pushing learners to modify their output, Tsang (2004) explored the possible relationship between error type and learner response. The study found CF in L2 classroom settings promoted student-generated repairs, thus facilitating L2 acquisition. Different types of feedback function differentially depending on the type of error the feedback addresses. With the purpose of identifying the connection between feedback, error type and students' uptake,

Tsang's (2004) study presented an analysis of teacher-student interaction in a mixture of meaning-focused and form-focused English lessons at the secondary level in Hong Kong.

The study involved 13 teachers and 481 students (aged 12-17) from 13 classes of "English as a non-native language" in two secondary schools in Hong Kong (English is an official language in Hong Kong, alongside Chinese language, but is rarely functional outside of the domains of education, government, trade, and certain professions). The two schools resembled each other in many aspects, such as financial support and grade levels. The 13 classes, with the average class size being 35 students, were selected based on the average English ability of each form level (equivalent to grades 7-11 in the US). There was a total of 18 lessons that were transcribed for analysis, totaling 945 minutes and covering five General English lessons, five Reading lessons, five Writing lessons, and three Speaking lessons. Grammar instruction was incorporated into general English lessons and other lessons, thus Tsang (2004) argued that there were no clear distinctions between communicative lessons and grammar lessons. The data analysis emphasized only the teacher-student interaction, and the transcriptions were coded as errors, feedback, and uptake. Fifteen percent of the data were randomly selected in order for an English teacher to recode for verification.

Overall, the results showed that while teachers treated the majority of the errors (responded to 77% of the errors), less than half of their feedback was taken up by students (48%) and only 19% of errors were repaired. In particular, recast was found to be the most frequent type of feedback (48%), followed by explicit correction (14%), repetition (14%), metalinguistic clues (12%), clarification request (9%), and elicitation (4%). Elicitation, clarification request, metalinguistic clues (the three types were

classified as negotiation moves) were followed by higher rate of repairs than recast or explicit correction (the two types were classified as correction moves). Only negotiation moves led to student-generated repairs. In addition, the highest rate (75%) of grammatical repairs followed negotiation moves (versus 25% followed recasts), while phonological repairs followed recasts and explicit correction at an equal rate (50%). Tsang (2004) concluded that recasts were the feedback of highest frequency but contributed to the least successful repair. Negotiation moves were effective “in mixed instruction with a focus on meaning and a focus on form” (p. 200). The study revealed that adolescents might not be responsive to recasts, which could be attributed to a psycholinguistic or developmental lack of readiness for recasts.

One of the contributions of Tsang (2004) to the existing literature is the confirmation of the usefulness of the pedagogical strategy that “pushing learners in modifying their output by providing consistent feedback to signal clarification while delaying correction makes room for self-repair” (p. 201). Based on the relation between error type and learner uptake, Tsang (2004) has suggested that teachers need to make their choice of feedback respondent to the type of error that has occurred to ensure the effectiveness of the feedback support. Furthermore, the study is relevant to my study, as it has provided a descriptive research model that uses Lyster and Ranta’s (1997) taxonomy of CF as the coding schema to explore different types of CF in a distinctive classroom setting.

However, there are methodological issues need to be addressed in Tsang’s (2004) study. First of all, it did not provide a clear description of the data collection process. There was no information about whether the lessons involved in the study were video or

audio recorded. Varying recording methods could impact the results of analysis due to the amount of information each method can offer. Second, the extensive range of grade levels, content of lessons, and teacher and student population in a single study might influence the results. Although the lessons under analysis are all secondary level and the research has run Chi-tests to show the insignificance of the grade level and content of lesson, the study did not report any background information in relation to its teacher and student participants. It is possible that a combination of heterogeneity of participant population and other factors, such as grade level and lesson content would lead to different results.

2.3.2 Interactional context and corrective feedback within classrooms

Oliver and Mackey (2003) explored the role of interactional context in teacher-student exchanges within ESL classrooms. This was done by highlighting the notion that interactional contexts of exchanges where CF occurred played an important role in the provision and use of interactional feedback. Defining interactional context as the focal discourse environment where the teacher-student interaction involving feedback takes place, Oliver and Mackey's (2003) study aimed to address two questions: "Can distinct interactional contexts be reliably identified by researchers and teachers in teacher-learner exchanges in classroom discourse?" and "If so, does the opportunity for and the provision and use of feedback differ according to the interactional context?" (p. 522).

The study was conducted in five Australian ESL classes, and five teachers and their students participated the study. The ESL classes were in different intensive language centers of elementary schools, and each class had 10 to 16 students between the ages of 6 and 12 years old. The teachers were all qualified ESL professionals, while the students

had various language backgrounds and had all arrived in Australia within the previous year. The data of the study were collected through observations of one randomly selected full teaching day (4.5 hours a day in the 14-week semester) in each class. The database was Oliver and Mackey's transcription of the first 150 "clear and complete three-part exchanges" (p. 522) in each class, and the three-part exchange included a student's initial utterance, the teacher's response and the student's reply to the teacher's response. The coding process followed four steps: first, identifying the students' non-target-like utterances; second, teacher responses to non-target-like utterances were coded on the basis of if they provided CF, and the nature of feedback was coded as negotiation (including confirmation checks and clarification requests), recasts and explicit correction; third, feedback was coded according to if it allowed the modified output; and fourth, the students' responses to teachers' feedback were coded based on if they modified their output. Interactional contexts were identified as having four primary foci: content, management, communication and explicit language. The identification was based mainly on teachers' responses to students' utterances.

Two raters obtained a very high level of agreement for coding, with the interrater reliability scores of 98.26%, and the stimulated recall comments provided by the five teachers were also consistent with the four contexts identified by the researchers. Concerning the interactional context, the results showed that content exchanges occurred most frequently (40%) and explicit language-focused exchanges had the least occurrence (10%). Chi-square analysis of the data further revealed that there were significant differences in the opportunity, provision and use of feedback depending on the interactional contexts. The opportunities for CF to occur were much greater in exchanges

where the focus was on communication (51%) than those in content (26%), management (27%), and explicit language (28%) exchanges. Teachers' provision of feedback following non-target-like utterances of students occurred in all four contexts, with the explicit language context attracting most feedback (85%), followed by content (61%), communicative (54%) and management (35%) contexts. Particularly, the proportion of negotiation in communicative contexts (34%) was significantly greater than in the three other contexts. Recasts were used at a fairly equal frequency in content, management, and communicative exchanges, but significantly less in explicit language-focused exchanges. However, recasts were used most frequently across all contexts. The tokens for explicit feedback were low, but it occurred significantly frequently in the context with an explicit language focus. Students had the most opportunities to use the feedback in explicit-language-focused exchanges (76%). In terms of their actual use of the feedback, contexts with an explicit language focus still attracted the most modified output from students.

The results have suggested that contextual factors can affect the amount and nature of CF and the extent to which CF leads to modified output, supporting the assertion that "the L2 classroom is a social context in its own right and the language classroom cannot be understood without taking contextual factors into account" (Oliver & Mackey, 2003, p. 530). The results of this study contradict with those that found modified output rarely follows recasts (e.g., Lyster & Ranta, 1997) by suggesting that students "can and do modify their output following recasts, but much more in certain types of contexts than in others" (p. 530). There are two implications of Oliver and Mackey (2003) that relate to my study. First, it examined interactional contexts and their relation to CF within a classroom, which is worth investigating in the immersion

classroom because content-focused exchanges and explicit-language-focused exchanges might involve different types of CF and lead to varying use of feedback. Second, the coding system used in the study is an inspiring analytic method for me to follow for my data on Chinese immersion teachers.

Oliver and Mackey's (2003) investigation was limited by the duration of the observation which was only one day (4.5 hours). A longer observation could result in richer data and thus could strengthen the validity of the study. In addition, the students in the study had different L1 backgrounds, and they might behave differently in response to CF. Furthermore, as Oliver and Mackey mentioned, the operationalization of context was simplistic, thus "it would be desirable to replicate this study in different classroom and language contexts, with a range of learners carrying out different sorts of activities" (p. 531). Finally, the researchers have pointed out that the research warrants the inclusion of learners' perception about interactional feedback to triangulate the researchers' perception about learner uptake.

As research such as Oliver and Mackey (2003) suggests that teacher feedback and student uptake vary depending on whether the feedback is provided in a meaning-focused or a form-oriented context, Gurzynski-Weiss and Révész (2012) assumed the use of interactional feedback is affected by "whether students are performing meaning-based tasks or whether they are engaged in more form-focused activities" (p. 854). On the basis of Ellis' (2003) generalized definition, Gurzynski-Weiss and Révész (2012) defined "task" as a planned, meaning-oriented activity that could bring about discourse similar to that of real life, engage cognitive processes, and have nonlinguistic outcome. A focused task was designed to elicit certain linguistic feature, while an unfocused task did not have

a predetermined language focus. Identifying that there had been little research investigating feedback and task factors in classroom settings, the researchers aimed to examine teacher-student interactional feedback in relation to task-related factors in intact classrooms. In particular, the study has focused on whether feedback is provided during task or nontask work, whether feedback occurs when students are engaged in focused or unfocused tasks, and whether feedback is provided in a pre-, during-, or post-task phase.

The procedures of the study involved observing and videotaping nine intermediate Spanish as a foreign language classes in a university in the US. Nine instructors with their students participated in the study. All instructors used the communicative language approach with the same teaching materials, and all but one instructor had been trained in a teaching methodology course advocating task-supported language teaching before they started teaching. Data consisted of videotaping of 23 lessons, seven focusing on business vocabulary, seven on passive and impersonal use of *se*, seven on subjunctive mood, and two on article, directional vocabulary and commands. Two coding systems were adopted, one for task-related variables, and the other for feedback and modified output. Raw frequencies and percentages were calculated for amount of feedback, type of feedback, opportunity for modified output and incidence of modified output in relation to three independent variables, which are task, task focus, and task phase. Chi-square test was conducted to test the association between feedback- and task-related variables. Finally, logistic regressions were performed to test the relationship between dependent and independent variables.

The results showed the type of feedback did not vary depending on task or non-task activity, but significant variations were present regarding the quantity of feedback,

opportunities for, and incidence of modified output. Instructors were more than twice as likely to provide feedback in non-task activities, thus students were also twice as likely to have opportunity for and actually produce modified output during non-task activities. Instructors were approximately 60% more likely to supply CF during unfocused tasks compared to focused tasks. However, students were given three times as many opportunities to produce modified output in focused tasks. There were very few instances of interactional feedback observed in the pre-task phase. In the post-task phase, instructors were almost three times as likely to supply feedback as in the during-task phase. During the post-task phase, the frequency of implicit feedback was almost 50% more than that in the during-task stage.

Gurzynski-Weiss and Révész's (2012) findings in combination with those of Oliver and Mackey (2003) confirm that lesson contexts with a focus on form tend to lead to more extensive provision of interactional feedback and learners' immediate use of feedback than contexts that are oriented towards content and meaning. The study further proposed that teachers' different expectations underlying form-based (non-task work) and meaning-based (task) contexts might influence teachers' provision of and students' reactions to interactional feedback. An interesting finding of this study was that students' actual production of modified output was not influenced by the task focus, although instructors provided more opportunities for modified output in focused as opposed to unfocused tasks. One limitation of this method is the selection of the lessons. The number of lessons videotaped for each instructor was unequal, which also makes the number of lesson of the same content uneven. Another limitation lies in the arrangement of recording equipment; while a single camera placed at the back of the class can reduce the

disruption on normal classroom teaching, it might also compromise the sound quality it is able to capture in interactional instances that happen far away from the camera position.

2.3.3 Learner perception and corrective feedback

Grounded in interaction hypothesis (Long, 1996), Mackey, Gass and McDonough (2000) is one of the laboratory studies that follows the theoretical claims about the benefits of conversational interaction. The researchers took the assumption that negotiated interaction that often results in learners receiving feedback can lead to L2 development to some extent, in particular, negotiated interaction is one of the means for “drawing learners’ attention to linguistic form, making it salient and thereby creating a context for learning” (p. 476). Learners’ reports about their perceptions were considered to be an essential initial step in examining interactional feedback and L2 learning. The focus of the study is to investigate learners’ perceptions about conversational interaction involving negotiation moves and recasts, specifically, if they recognize or perceive the feedback and the target of the feedback. Mackey et al. (2000) defined negotiation as reformulations made by native speakers and learners of their utterances to achieve comprehensibility, and defined recasts as target-like version of a learner’ utterance produced by the native speaking interlocutor.

The study involved 17 participants who enrolled in language courses at a US university. Ten participants were ESL learners with various L1 backgrounds, and 7 were Italian as a foreign language (IFL) learners with English as their L1. All participants were at the beginning or lower to intermediate levels by their language programs. The experiment included a communicative task and a stimulated recall. The communicative task was carried out by each learner with a native speaking (English) or near-native

speaking (Italian) interviewer, and it consisted of two-way information exchange activities, in which each participant had a picture that was similar to the interviewer and they worked together to identify the differences between the pictures. The task lasted for 15-20 minutes and was videotaped, and the interviewers provided feedback when the participants produced a non-target-like utterance during the task interaction. The stimulated recall task immediately followed the communicative task through showing the videotape for participants and asking them to recall their thoughts at the time the original interaction took place. The recall sessions were audiotaped and were conducted in English. The database for the study included the interactional feedback episodes and stimulated-recall comments about the episodes. There were four coding categories for errors—phonology, morphosyntax, lexis and semantics, and six categories for stimulated-recall comments—lexical, semantic, phonological, morphosyntactic, no content, and unclassifiable.

The ESL data showed that the number of feedback episodes in which learners perceived the target of the feedback differed depending on the feedback target. Learners generally did not recognize feedback that targeted morphosyntactic errors as being about morphosyntax, whereas they could recognize the feedback for lexis and phonology (13% versus 83% and 60%). The IFL data showed a similar pattern: the chance for learners to accurately perceive the morphosyntactic nature of the feedback was relatively low (24%), compared to feedback that targeted lexis (66%). The researchers also conducted two post hoc analyses to explore the relationship between learners' perceptions, the type of feedback and the target of the feedback as well as the relationship between learners' perceptions about feedback and their uptake. The results revealed that feedback with the

target of morphosyntax was most often provided in the form of recasts. For 66% of the feedback with uptake, learners could accurately perceive the target of the feedback, while the rest of the feedback with uptake (34%) was not accurately perceived by the learners. For feedback episodes that did not lead to uptake (48%), the learners did not recognize the target of the feedback either for most of the time (89%).

Connecting to my study, the study is insightful in terms of the rich descriptions it provided about the research designs, especially the details about incorporating a stimulated recall method to prompt learners' recollections of their thoughts when they originally performed the task. This method has afforded a better understanding of how learners perceive interactional feedback and how these perceptions relate to their subsequent uptake of the feedback. However, the diversity of the participants' L1 background and the low level of their target language ability need to be taken into consideration when interpreting the research results. It is possible that learners' failure to accurately perceive the targets of the feedback results from their unfamiliarity with the linguistic features. Furthermore, English is the language used in the stimulated-recall session to elicit participants' thoughts, which might lead some participants with lower English level to be underreporting.

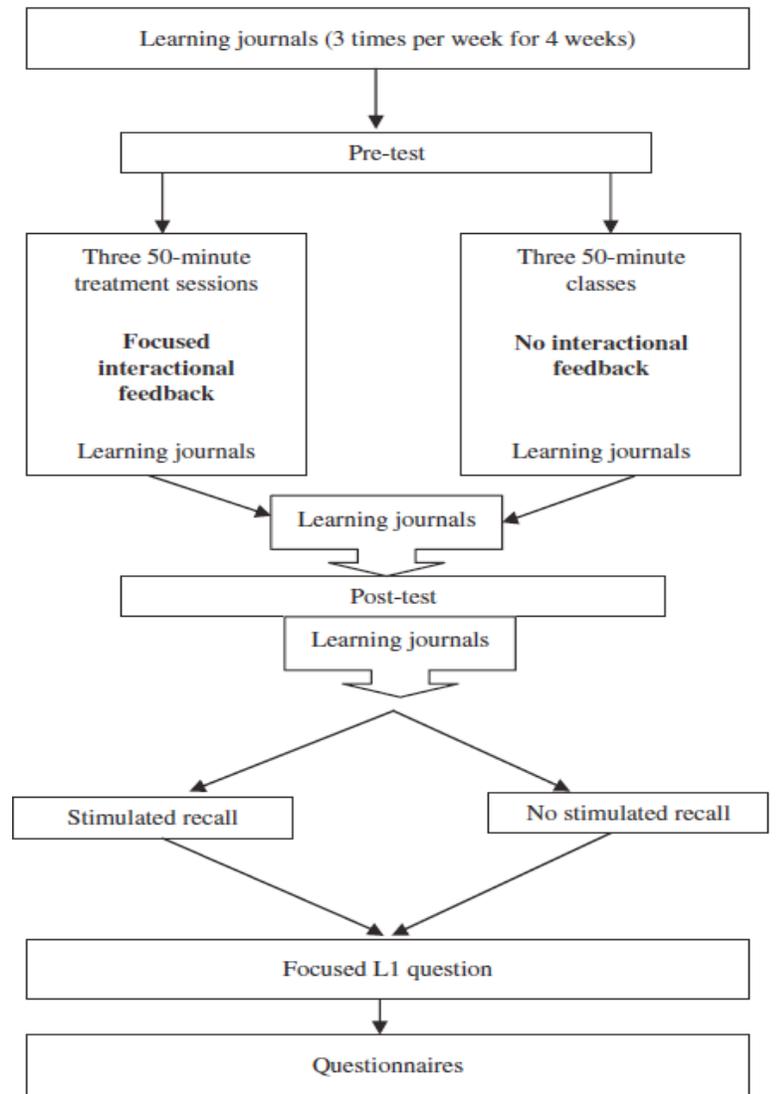
Different from the laboratory setting in Mackey et al. (2000), Mackey (2006) is a quasi-experimental study examining learners' cognitive process involving interactional feedback in the classroom setting. Similar to Mackey et al. (2000), Mackey (2006) took a cognitive-interactionist lens to conceptualize her research, and claimed that interactional feedback is beneficial to learners. However, Mackey (2006) took a step forward, not only to investigate if learners perceived the feedback, but also to examine if there was direct

link, mediated by learners noticing of the L2 form, between interactional feedback and L2 learning. The goal of the study was to examine the relationships between feedback, learners' noticing of the L2 form and the subsequent L2 development. The target forms were questions, plurals and past tense forms.

Two ESL classes with 28 students and two teachers in a university-level intensive English program participated in the study. Students came from different L1 backgrounds were assessed as being at the high-intermediate level of English. As *Figure 3* shows, the study consisted of multiple measures to collect data on noticing: learning journal, stimulated-recall, focused L1 questions, and a questionnaire. The experimental class (15 students) and the control class (13 students) carried out similar activities for three consecutive class periods over three days. The difference was that students in the experimental class had opportunities to receive CF whereas the control class did not. As one of the measures for collecting noticing data, a learning journal was part of the class routine that asked students to record the language forms they noticed. By the time of the experiment, students already had written the journal for four weeks. Pre-tests and post-tests were designed to measure students' L2 development, and both of them included three similar tasks that provided contexts to elicit target forms. The stimulated recall interview was conducted to the experimental class to determine if the feedback they received promoted the noticing of the target forms. Students were shown video clips of the three classroom activities where feedback was included and were asked to report what they were thinking during the original interaction. Students from both the experimental class and the control class were invited to write responses to a focused question about the nature of the classroom activities in their L1, in order to make sure that their answers

were not constrained by their L2 proficiency. In the end, they filled out questionnaires that elicited information about what they might have been noticing during the experimental period.

Figure 3 Research design of Mackey (2006)



Note. Reprinted from “Feedback, noticing and instructed second language learning”, by Mackey, A., 2006, *Applied Linguistics*, 27 (3), p. 441.

The researcher took a holistic coding of the four measures of noticing. For example, the same instance of noticing appeared both in learning journals, and the stimulated-recall protocol was counted as only one instance instead of two. The results

revealed that students in two classes produced targeted forms in a similar range. Among the feedback provided to the experimental class, 20% was for question forms, 19% for plurals, 15% for lexis and 11% for past tense morphology. Twelve out of 15 students in the experimental group indicated high levels of noticing of question forms, while the number of students who indicated high levels of noticing of plurals and past tense was 10 and 5. On the contrary, the corresponding number for the control class was 1, 2, and 1 out of 13. The data has suggested that learners noticed L2 forms more when interactional feedback was provided. The data also showed the relationship between learners' reports of noticing of L2 forms and their L2 learning outcomes. The number of students in the experimental class who reported noticing developed in terms of their production of questions, plurals, and past tense morphology, was 9 out of 12, 5 out of 10, 1 out of 5, respectively. For the control class, 3 learners developed in terms of their production of questions. The number was the same to the learners who gained development regarding their production of the past tense morphology, whereas none of the learners had development in their production of plural forms. A chi-square analysis also found the significant relation between noticing and learning.

There is one major contribution of Mackey (2006) to the field, which is its triangulation of noticing through multiple measures of data collections. The multiple opportunities provided for the students to probe into their cognitive process to ensure there was nothing missing in students' reports. However, this is also the source of problem. Students who participated in the noticing measures more than one time would probably be oriented toward certain features, especially the stimulated-recall session, which might have heightened the tendency for students to report noticing in subsequent

noticing measures. In this case, it was not the CF that promoted the noticing, but the way the experiment operated help increasing students' awareness. In addition, the researcher looked at the noticing data in a holistic way, despite the fact that the four noticing measures took in various formats and were conducted separately, which would thus bring along invalid results. Last, as the researcher mentioned, not all participants were present in the entire experiment process. For example, several students did not take the post-test. The inconsistency of the participant number might also interfere the analysis.

The study of Kim and Han (2007) is also a classroom research investigating the learner perception of interactional feedback. Differing from Mackey (2006), it did not involve any experimental treatment, and the interactional data was collected in the naturalistic classroom setting. Grounded in the Long's (1996) interaction hypothesis, Kim and Han's (2007) study focused on teachers' intent and learners' perception of recasts and different variables that might affect learners' perceptions of recasts. Based on Lyster and Rantan (1997), Kim and Han (2007) identified two types of teacher intent for recasts in meaning-based classroom: corrective purpose, primarily for indicating students' non-target-like utterances, and communicative purpose, primarily for sustaining classroom interaction and its coherence. The researchers also claimed that the type of addressee (recipient or observer of the recast), the type of linguistic target (morphology, phonology, syntax, or lexis), and complexity (involving one or more recasts) might influence the extent to which learners could recognize teachers' intent.

Four intermediate adult EFL classes at a private institute in Korea were involved in the study. Two native English-speaking teachers taught the classes, with each teacher teaching two classes. The class size ranged from 8 to 10 students and none of them had

lived in an English-speaking country. Teachers followed a communicative teaching method with the purpose of developing communicative skills. The classroom interactions were meaning-oriented. A 50 minute-session of each class was observed and videotaped. Immediately following the observation and videotaping of each class, students were invited to attend a stimulated recall interview; specifically, they were asked to watch the class video with the researcher and to be interviewed individually. The two teachers had the stimulated recall interview as well, immediately following the second class they taught. The data set consisted of transcripts of recast episodes and the students and teachers' recall comments.

The findings demonstrated that there was a considerable overlap between the teachers' intent for recasts and the students' interpretations. Students reported that they recognized corrective recasts (65%) more than communicative recasts (19%). Irrespective of whether students were observers or recipients of the communicative recasts, they performed equally well. As to the complexity of recasts, students recognized simple recasts (225 recalls) more than complex recasts (40 recalls). The analysis of the type of linguistic target revealed that morphosyntactic problems attracted more recasts, followed by lexical and phonological problems. Furthermore, a set of chi-square analyses conducted showed that the type of addressee did not affect learners' perception whereas the type of linguistic target did, regardless of the complexity of the recasts, whereas the extent to which the type of teacher intent affected the learners' perception was modulated by the complexity.

Kim and Han (2007) contributed to the on-going discussion about learners' cognitive process during receiving the interactional feedback by reporting empirical

evidence from a naturalistic classroom setting. The study also provided data about teachers' underlying intent for recasts, a frequently used type of feedback in classrooms. It added to the very limited number of direct empirical research on teachers' underlying intent. Kim and Han's (2007) study has been inspirational in terms of its design, particularly the rich description of the way the classroom observation and stimulated recall interview were conducted. Because the context of my study is also meaning-based, and the research method includes observation and stimulated recall interviews as well.

There are several constraints of Kim and Han (2007) that need improvement. First, as the individual stimulated-recall interview was conducted one by one after class, the waiting time produced delays for some of the participants, and the length of delay was different for each participant. Second, despite the small sample size, the short class period is another weakness. Teaching and learning in a single class session could be incidental and unrepresentative. Observing and recording the classes over a sustained period of time could provide a better portrayal of what usually happens in the classroom. Another confounding issue is about the teacher participant and their teaching content. Little information of the two teachers was provided in the study and what they taught; thus, it is not clear whether there is enough control for their habit of feedback provision and the interaction activity through which interactional feedback occur.

2.3.4 Conclusion

The focused review of the research on CF in second language settings has revealed that there is a need for more research into the way teachers use a second language to support students' learning through CF techniques, especially in immersion settings. I therefore locate three gaps that my study will attempt to address: (1)

observations of Chinese immersion classrooms that offer a thorough examination of CF including its type and the frequency of CF; (2) the relationship between the contextual focus of the teacher-student interactional exchange and CF in the Chinese immersion setting; and (3) the students' perceptions of the oral CF provided by the teacher and the teacher's corrective intent in the Chinese immersion setting. The table below summarizes the studies I reviewed. It presents a compact version of the review for readers and myself to navigate

Table 1 Overview of focused literature

Source	Focus	Context	Theoretical/ conceptual Framework	Research Design	Relevant Findings
Lyster and Mori (2006)	Teachers' instructional feedback and the effect on learner uptake	French early total immersion in Canada and Japanese partial immersion in the US	Reactive focus on form; instructional feedback; learner uptake and repair	Observations of four French immersion classrooms from Lyster and Ranta (1997) and observations of three Japanese immersion classrooms from Mori (2002)	Teachers in two settings used feedback in similar patterns: recasts were most frequently used, then prompts were second and followed by explicit correction; more uptakes and repairs were observed in Japanese immersion classrooms; most uptakes and repairs followed recasts in Japanese classrooms, while most uptakes and repairs appeared after prompts in French classrooms.
Gibbons (2003)	How teachers support students in developing spoken but less context dependent language in order for them to gain control of more formal registers	Two ESL classes in Australia	Mediation of sociocultural theory and mode continuum from systemic functional linguistics	Two teachers with their students; observations of one complete unit of teaching; interviews with teachers and students; environmental prints around the classroom	Teachers mediated language development in the following ways: mode shifting through recasting, signaling to learners on how to reformulate, indicating the need for reformulation and recontextualizing of personal knowledge.
Tsang (2004)	The relation between error type and learner uptake	Secondary English as non-native language classes in Hong Kong	Types of corrective feedback, learner uptake	Descriptive study with quantitative analysis; transcriptions of 13 teachers and 481 students (aged 12-17) from 13 classes in two schools	The majority of errors were treated by teachers, less than half of the feedback was taken up by students, and only a small amount led to self-repair. Recasts were the highest frequency feedback but contributed to the least successful repair.
Oliver and Mackey (2003)	Interactional context and corrective feedback	Five ESL classes located in elementary school intensive language centers in Australia	Interactionist SLA theory	Observational classroom study with qualitative and quantitative analysis; five qualified ESL professionals and their students with varying L1s	Four patterns of interactional contexts were identified: exchanges that focus on content, communication, management and explicit language. Contextual factors can affect the amount and nature of corrective feedback and the extent to which corrective feedback leads to modified output; learners can and do modify their output following recasts, but to a much higher degree in certain types of contexts than in others.

Source	Focus	Context	Theoretical/ conceptual Framework	Research Design	Relevant Findings
Mackey, Gass, and McDonough (2000)	Learners' perception about interactional feedback: the extent to which learners perceive feedback provided through interaction and the target of the feedback	ESL context and IFL (Italian as a foreign language) context at the university-level	interaction hypothesis; noticing hypothesis	Laboratory study; each learner carrying out a communicative task with a native (English) or near native interviewer; the tasks involving two-way information exchange activities; a stimulated recall following the tasks	Morphosyntactic feedback was seldom accurately perceived and was generally provided through recasts; phonological and lexical feedback were perceived more accurately and were generally provided through negotiation and combination moves; interactional feedback may benefit lexis and phonology more than grammar.
Mackey (2006)	The relationships between feedback, instructed ESL learners' noticing of L2 form during classroom interactions and their subsequent L2 development	Two ESL classes in a university-level intensive English program	interaction hypothesis; form-focused instruction; noticing hypothesis	Quasi-experimental study; controlled pre-test, post-test design; two experienced ESL instructors and 28 ESL students; tasks designed to promote the use of pre-selected linguistic forms; four methods used for collecting noticing data, including learning journals, stimulated recall, focused L1 question and questionnaires	Interactional feedback contributed to the noticing of L2 forms, namely, as a potential mediator in the feedback-learning relationship; there may be a connection between noticing and learning for the question forms.
Kim and Han (2007)	Teacher intent and learner interpretation of recasts	Four EFL classes in Korea	interaction hypothesis	Observing and video-taping of four classes taught by two teachers; stimulated recall interviews with students and teachers	There was an overlap between the teachers' intent for recasts and the students' interpretations; corrective recasts, overall, fare better than communicative recasts in enabling students to recognize gaps between the recasts and the trigger utterances; students were much better able to recognize gaps with the simple recasts than with the complex recasts.
Gurzynski-Weiss and Révész (2012)	Tasks and interactional feedback	University-level intermediate Spanish foreign language classrooms	interaction hypothesis	Observational study; nine instructors and their students; videotaping of 23 lessons in four separate days	Differences in the type, frequency and manner of corrective feedback in the two instructional settings; no significant difference in the learner uptake between two settings; teachers' attitude affected learner uptake.

2.4 Theoretical Framework

In this section, I present an outline of the theoretical framework upon which the study relies. The framework includes a set of assumptions and provides explanations of relevant constructs and premises in order for me to make sense of the phenomenon of interest. Among the many theories on how language is learned, the nurture position assigns a critical role to the linguistic environment in developing a learner's language. The interaction approach to second language acquisition (SLA) shares a theoretical underpinning with the nurture position of language acquisition, and it claims that conversational interaction provides learners with an acquisition-rich environment in which they have access to comprehensible input, output opportunities, and interactional feedback. Below, the interactionist perspective of SLA is reviewed from its historical background to recent development.

2.4.1 Historical Development of the Interaction Approach to Second Language Acquisition

The development of interactionist SLA theory can be traced back to a few lines of research in the 1970s, when some researchers (e.g., Ferguson, 1971) were interested in the discourse patterns occurring in the conversations between native speakers and learners. They termed the discourse in which native speakers modified their speech in order to make it comprehensible to learners as “foreigner talk” and argued that these modifications (such as repetitions and syntactic simplifications) promoted the acquisition of the target language. This idea of comprehensibility and L2 acquisition was discussed later by another line of research, represented by Krashen's Input Hypothesis (Krashen, 1982, 1985). According to the Input

Hypothesis, if learners were exposed to input that was comprehensible but slightly above their current level, and had low levels of negative feelings associated with learning the target language (low affective filter), the acquisition would subconsciously occur. However, Krashen did not value the native speaker and learner interaction, and claimed that comprehensible input is necessary and sufficient. The late 1970s saw a shift of research focus to interaction, and researchers started to attribute importance to this in L2 acquisition. For example, Hatch (1978) argued that interaction might be the site for L2 acquisition. On the basis of the work of these researchers, Long formulated his early version of the interaction hypothesis (1980). The hypothesis mainly argued that conversational modifications, which occurred between native speakers and non-native speakers when they tried to resolve communicative difficulties, led to comprehensible input and L2 development. The conversational exchanges involve interactional modifications which Long (1980) referred to as changes to accommodate potential or actual problems of understanding. These modifications can provide greater transparency of semantic or syntactic relationships for learners, and are crucial factors in facilitating comprehension, thus ultimately facilitating L2 acquisition.

The early version of the interaction hypothesis accounted for how interactionally modified input contributes to acquisition by specifying the learner internal mechanisms that are involved. Interactionally modified input works for acquisition when it helps learners to notice linguistic forms in the input and the forms that are noticed lie within the learner's processing capacity. The interaction hypothesis also explains three ways where negotiation can contribute to language

learning: (1) enabling learners to obtain comprehensible input—which has been distinguished by Pica (1987) as three kinds of negotiated input: semantic, segmentation and movement of constituents—and supplying them with positive evidence, such as models of what is grammatical and acceptable; (2) providing negative evidence, such as direct or indirect evidence of what is grammatical, arising when learners receive feedback on their own attempts to use the target language; and (3) providing opportunities for modified output, which can obligate learners to engage in syntactic processing that would foster acquisition. However, Long also stated that modifying input was not the only means for achieving the message comprehensibility.

The early version of interaction hypothesis incorporated Krashen's idea of comprehensible input being necessary and sufficient for L2 acquisition. However, a few researchers have questioned this claim and proposed the argument about comprehensible input being necessary but insufficient. Based on her work with French immersion students, whom she observed had production skills that lagged greatly behind their comprehension skills due to the lack of opportunities to produce output, Swain (1985) stated that comprehensible output as well as comprehensible input are required for learners to achieve a higher level of competence. Swain (1995) further discussed three functions of output: first, it triggers noticing and raises learners' consciousness of the language they produce; second, it gives learners chances to test hypotheses about the target language; and third, it allows learners to go beyond noticing and reflect on the target language forms. White (1991, 2003) also argued against the idea of comprehensible input being sufficient. She provided the case of the acquisition of the rule of adverb placement in English by French learners.

In English, the V-Adv-O word order is ungrammatical, meaning, adverbs cannot be placed between the verb and the direct object, whereas the same word order is grammatical in French. Therefore, French learners of English might assume a sentence with the V-Adv-O is acceptable if no information about it being unacceptable is provided. White (1991) indicated that if comprehensible input were the only source, learners would have to notice the V-Adv-O order being absent in English to have the acquisition, which is theoretically possible but might be facilitated if there is correction provided.

Interest in the role of attention grew out of the discussions of interaction and also from L2 learning. For example, Schmidt (1990, 1993), proposed a noticing hypothesis claiming that second language learning was a conscious process and only consciously noticed input contributed to learning. Some quasi-experimental classroom studies provided further evidence of focused attention and interaction (e.g., Manheimer, 1993; White, Spada, Lightbown, & Ranta, 1992). These studies compared groups of learners who acquire structures incidentally and groups of learners for whom the target structures are made salient, and showed that the latter group generally learn faster.

Based on the work of these researchers, Long (1996) presented a revised version of the interaction hypothesis. The updated version primarily states that, “negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS (native speaker) or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways” (p. 451-452). Negotiation is defined as

involving “denser than usual frequencies of semantically contingent speech of various kinds (i.e., utterances by a competent speaker, such as repetitions, extensions, reformulations, rephrasings, expansions and recasts), which immediately follow learner utterances and maintain reference to their meaning” (p. 452). Learners’ selective attention is considered as focusing on a limited and less overwhelming portion of input. L2 learners might benefit from having their attention drawn to the target language as the object; however, it has to be in context as Long (1996) has argued. Long (1996) also added that negative feedback, which usually takes forms such as repetitions, reformulations and recasts, is generally facilitative of L2 acquisition because feedback “occurs when attentional space is available for the NNS (non-native speaker) to orient to the form of the response” (p. 429).

2.4.2 Recent Discussions: Corrective Feedback and Second Language Acquisition

Mackey and Gass (2005) have indicated that the goal of much interaction-oriented research includes manipulating the kinds of interactions that learners are involved in, the types of interactional feedback they receive, and the kind of output they produce, to determine the relationship between the various components of interaction and second language learning. Empirical evidence has been obtained through extensive research with children, adolescents, and adults in both classroom and laboratory contexts. Thus, the interaction approach has evolved to be a comprehensive framework, and is no longer considered as a single hypothesis. The recent discussions of the interaction approach in Gass and Mackey (2007b) have stated that, “it is now commonly accepted within the SLA literature that there is a robust connection between interaction and learning” (p. 176). Mackey (2012) further

pointed out that the current research has moved beyond the early inquiries that try to establish links between interaction and learning, towards complexity elevated investigations that examine “the importance of social, cultural, and linguistic factors and the effects of learner-internal cognitive mechanisms on second language development” (p. 4). Mackey (2012) has cautioned that interaction itself is not sufficient for the learning of a second language, but is a facilitator of many of the processes involved in learning.

As reviewed in the last two sections, CF in L2 learning has been of interest to many interactionist SLA researchers, because it can not only serve as a source of comprehensible input, but also can make the problematic aspects of learners’ utterances salient and thus leads to modifications when learners experience communication problems (Mackey, 2002). Doughty (2001) argued that through CF, learners and the more competent interlocutor can negotiate for meaning in order to understand each other, and learners are provided with information about their linguistic and communicative failure that is tailored to their communicative needs and developmental levels. Mackey argued that experiencing communication difficulties during L2 interaction can create a favorable environment for L2 development, as learners are primed to be “more sensitive to future input and to search for more information regarding words, structures, pronunciation, etc., or to be more aware of their implicit hypotheses about how the L2 works,” and negotiated input through CF might “serve to confirm or disconfirm such hypotheses, in which case the learner may form additional hypotheses, with the cycle repeating until the learners’ theories are confirmed” (p. 12).

Receiving feedback

Explicitness is a variable that is often discussed in distinguishing CF received by learners, because it attributes a role to noticing target features in the input and thus potentially influences L2 learning. Learners are more likely to notice explicit CF than implicit ones. However, explicitness varies depending on the instructional context and communicative orientation as well as learners' perception of salience. Clarification requests and repetition are generally considered to be implicit feedback (Lyster, Saito, & Sato, 2013; Mackey, 2012; Sheen & Ellis, 2011), and elicitation and metalinguistic clues are more explicit than clarification requests and repetition (Ellis, 2006). Recasts tend to be considered implicit (Long, 1996, 2007), but can vary greatly in their features, especially in terms of their length, number of errors corrected, and prosodic adjustments (i.e., stress or intonation).

Another factor that associates the comparison of various types of CF is the linguistic evidence that comes with each type. Positive and negative evidence are the information that indicates what is correct and incorrect in the utterance. Positive evidence tends to be supplied through target models, while negative evidence often comes through corrections. Explicit correction provides both negative and positive evidence, and prompts provide negative evidence. Although only target exemplars are present through recasts, both positive and negative evidence can be found if learners perceive the recast as an indication of the existence of an error.

Noticing the gap

While the role of attention in SLA is contentious, there is a general recognition that attention and noticing facilitates L2 development (Gass, 1997;

Robinson, 2003; Schmidt, 1990, 1993). In terms of CF, the way the feedback modifies the interactional conversation helps learners notice the gap between their ill-formed utterances and the target form. These claims are reflected in the studies about learners' perceptions of interactional feedback (Kim & Han, 2007; Mackey et al., 2000; Mackey, 2006), as demonstrated in the focused review section 2.4.3. Although research warrants more studies to "capture the extent of what appears to be a complex relationship between noticing and learning" (Kartchava & Ammar, 2013, p. 10), there is evidence that noticing is dependent on the target feature. CF, including the salient linguistic feature, can influence its effectiveness. For instance, Leeman (2003) compared groups receiving unenhanced recasts, implicit negative evidence and enhanced recasts (saliency enhanced through manipulating stress and intonation), and found learners receiving enhanced recasts performed best. In addition, Mackey et al. (2007) found that students were more likely to perceive teacher's intent when explicit CF was provided.

Producing output

The processes involved in producing language can differ greatly from those involved in comprehending language (Clark & Clark, 1977). Output has been considered to be a necessary part of the process of learning, not simply its product (Swain, 1995). Modified output is the process of rephrasing one's original utterance in response to feedback or self-monitoring, and is beneficial to L2 development (e.g., Swain, 1985, 1995, 2005; McDonough & Mackey, 2006). Based on speech act theory (Austin, 1962), Lyster and Ranta (1997) used the term "learner uptake" to refer to utterances made by students that immediately follow teachers' feedback. Learner

uptake includes either utterances still in need of repair or those with repair. Repair has been defined as “the correct reformulation of an error in a single student turn” and not in the “whole sequence of turns resulting in the correct reformation” (Lyster, 2007). In earlier studies, learner uptake was considered as an important factor in determining whether the learner understood or noticed the feedback (Slimani, 1992), namely, whether the learner perceived the teacher’s intention by providing the CF. Recent studies have pointed out that learner uptake is not necessarily equated with noticing. Gass (2003) indicated that immediate learner responses may be just mimicry. McDonough and Mackey (2006) found learners who did not immediately respond to a recast could produce a new utterance using the feedback in subsequent turns, showing language development occurs without uptake. Similarly, Long (2007) questioned the equation of uptake with learning. Lyster (2007) and Lyster, Saito and Sato (2013), however, have emphasized that learner uptake is a discourse move instead of an instance of acquisition. Lyster (2007) has pointed out that it is the self-repair that may come with uptake contributes to L2 development, as it is “more likely to destabilize interlanguage forms, as learners are pushed to reanalyze interlanguage representations and to attend to the retrieval of alternative forms” (p. 118). Mackey (2012) has highlighted the importance of the process of modifying by stating that “output has benefits regardless of whether it is more, less, or equally as target-like as a learner’s original utterance” (p. 17).

2.4.3 Corrective Feedback within Content-based Classrooms

In classrooms that adopt CBI (content-based instruction), teachers deliver the subject knowledge through a language other than students’ first language, and

students are expected to master subject matter and the target language at the same time. However, as discussed in section 2.1.3, studies on outcomes of immersion programs showed that students' language skills developed in an unbalanced way. The L2 development does not occur automatically by just being exposed to the L2 environment. As Lyster (2011) stated, "by learning content through a second language, the second language does not come for free" (p. 612). Studies on teachers' thoughts and experiences also reveal great challenges at the interface of content and language teaching, preventing content teaching *per se* from being good language teaching. A phenomenological study exploring foreign language teachers' lived experiences of learning to use CBI in Cammarata (2006) showed that four teachers' experiences of learning to teach with CBI can be characterized as a "brutal confrontation that engages teachers in a continuous struggle to explore, rearrange, and sometimes reformat preconceived notions regarding language teaching and learning" (p. 73). Cammarata and Tedick (2012) investigated immersion teachers' lived experiences of attempting to balance content and language instruction, and found teachers struggled to find the exact language they needed to teach.

To address the problem, Lyster (2007, 2011) suggested integrating content-based instruction with form-focused instruction in a counterbalanced way (as mentioned in section 2.1.4). By doing so, teachers need to plan activities that interweave balanced opportunities for input, production and negotiation. Negotiation connects input and output, as teachers "exploit a range of interactional techniques that vary from the use of implicit feedback in the form of recasts that scaffold interaction in ways that facilitate students' participation, to feedback in the form of prompts and

other signals that push learners beyond their use of recalcitrant interlanguage forms” (p. 625). Overall, in content-based classrooms, CF allows students to integrate attention to meaning and form in ways that do not occur in focus on meaning instruction, which neglects linguistic accuracy, or in focus on forms instruction, which teaches discrete linguistic forms apart from a communicative context.

Recasts are used very frequently in content-based classrooms, mainly because they can serve to “maintain the flow of communication, to keep students’ attention focused on content, and to provide scaffolds (positive evidence) that enable them to participate in interaction about subject matter that requires linguistic abilities that might exceed their current developmental level” (Lyster, 2011, p. 623). Prompts including elicitation, metalinguistic clues, clarification request and repetition were found to be more effective, particularly in immersion classrooms, because they withhold correct forms (positive evidence) and offer students opportunities (negative evidence) to self-repair by generating modified output (Lyster 2004). Prompts fit well with instructional discourse and are especially compatible with content teaching, as they resemble the cluing procedure or withholding phenomenon identified in McHoul’s (1990) study of feedback in subject-matter classrooms (Lyster, 2004; Lyster & Mori, 2006; Ranta & Lyster, 2007). Although the contrastive effectiveness of recasts and prompts in immersion classrooms needs further examination, the overall occurrence and usefulness of oral CF have been recognized in research so far.

There are dual objectives within immersion classrooms: the interactional focus of the teacher-student interactional exchanges is oriented primarily towards either content or explicit language, and sometimes communication or management.

With a discourse analysis of two sixth grade Spanish teachers' talk in content-based instruction, Pessoa, Hendry, Donato, Tucker and Lee (2007) found the percentage of the language-related talk was higher than the content-related talk, and the teacher talks with both focuses were relatively rare. Similarly, at university-level CBI classes in Japan (i.e., Geography and Sociology taught in English by English native speakers), much more class proportion was focused on content. As already reviewed, Oliver and Mackey (2003) also identified distinct interactional contexts (primary foci of teacher-student exchange) in ESL classrooms, and showed the effect of CF was associated with interactional contexts. Although content-focused interactional contexts occurred most often, communicative contexts provided most opportunities for feedback, and feedback was used most often in language-focused contexts. Thus, these empirical evidences seem to imply that an appropriate planning of the interactional focus can create more opportunities for feedback that are considered to make students attend to the target language form, and thus may function as a way to counterbalance content and language instruction. However, connecting to immersion education, what needs to be investigated first is whether the similar kind of link between the interactional context/focus and CF exists in immersion classrooms.

Additionally, given the mediating role that CF plays in the noticing-learning relationship (Mackey, 2006) and the differing extents to which various feedback types are accurately perceived (Mackey et al., 2000) in non-immersion classroom settings, such as recasts that may trigger less noticing of the gap, it would be interesting to examine if similar patterns are applied to the immersion classroom setting. Another factor that has been under researched about perceiving or recognizing the gaps

between learner utterances and the target language form is the type of addressee, namely, whether the learner is the direct or indirect recipient (when the learner observes peers receiving feedback) of the CF. Ohta (2000) found students did notice salient contrasts conveyed by recasts that were directed to themselves and their peers, while Kim and Han (2007) found no significant relationship between perceiving the gaps and the type of addressee.

2.5 Conclusion

This chapter reviewed previous research studies surrounding the topic of interest. First, I reviewed the studies that provide a picture of educational context in which my study is situated and the typical instructional approach employed in the particular setting: immersion and content-based instruction (CBI). CBI is used in classrooms in which subject matter is used at least some of the time as a way of providing second language or foreign language learners with enriched opportunities for negotiating language through content. Previous research has found evidences from second-language acquisition, instructional strategies, educational and cognitive psychology, and program outcomes that support CBI. Content-based language teaching can be employed in a wide range of settings which can be described along a continuum, varying from content-driven programs to language-driven programs. Immersion falls on the content-driven side of the continuum. However, the research studying outcomes of immersion education has indicated an unbalanced development of target language skills among immersion students, who tend to have native-like comprehension skills and non-native-like, but highly proficient, production skills. This finding of unbalanced language skill development has called for an emphasis on

language in immersion classrooms. An integration of content-based and form-focused instruction has been proposed.

At the interface of the content-based and form-focused instruction is the teacher-student interaction with CF as an important part. Thus, for the second part of the literature review, I discussed the conceptualization of CF, types of CF, as well as the frequency and the effectiveness of each type of CF. Third, I reviewed and critiqued studies concerning CF in L2 classrooms, regarding CF across instructional settings, contextual factors within classrooms, as well as learner perceptions.

Generally, the studies demonstrate that teachers' oral CF plays an important role in different classroom settings. The type, the instructional context, the interactional focus of, and students' perceptions about the CF affect how students respond to the feedback and ultimately the subsequent L2 learning. The review of these studies indicates there is a gap in the literature, which is the investigation of interactional feedback and its influential factors in naturalistic classrooms, in particular, the immersion settings.

The current review also has indicated that the interaction approach to second language acquisition is a best fit to employ in the exploration of learning and teaching a second language through CF in the immersion context. This decision is made not just because other researchers have used this way and found it functional, but also because the nature of CF, the subsequent learning opportunities, the contextual factors and the relationship among them are consistent with this integrative framework.

Chapter 3: Methodology

3.1 Introduction

This chapter presents the research methods and procedures for this study. It includes sections on 1) the research questions that direct the study; 2) selection and rationale of the research design as well as a detailed description of the research context and participants; 3) instruments for the data collection; 4) data analysis strategies; and 5) the issues of validity and reliability for this study.

3.2 Research Questions

The purpose of the study is to investigate oral CF provided by Chinese immersion teachers and relevant factors that influence the effect of CF. CF is conceived as the reactive instructional technique that helps students to attend to problems of their utterances during the interactional process, and it is also tailored to students' needs for the purpose of helping them achieving their learning goals. CBI as an instructional approach widely used in immersion programs, has been discussed by researchers about the necessity of its integration with form-focused instructional techniques. CF is considered to contribute to the counterbalancing between the content and language instruction in immersion classrooms. The study was conducted within two Chinese immersion programs in elementary schools. Given the above premises and context which justify the necessity to examine the CF with regard to its interactional context and learner perceptions in immersion classrooms, the study focuses on these questions:

1. What type of oral corrective feedback is used in four elementary Chinese immersion classrooms?
 - a. What is the distribution of each type of corrective feedback?
 - b. How do learners respond to various types of oral corrective feedback?
2. Is there a relationship between the interactional context and:
 - a. the occurrence of teachers' oral corrective feedback?
 - b. the learner response to oral corrective feedback?
3. How do learners perceive oral corrective feedback in Chinese immersion classrooms?
 - a. Do learners accurately perceive the corrective feedback?
 - b. And is the accurate perception affected by the type of feedback and the type of recipient (direct or indirect recipient of the feedback)?

3.3 Research Design

3.3.1 Research Settings

The main research setting of this study was in two schools that offered Chinese immersion programs in a busy metropolitan area of the mid-Atlantic US. Two different immersion programs were involved, because it was expected that the distinction between the two programs including different instructional time spent in the target language, different program administrations, different teacher trainings and collaborations, and different class schedules and curriculums would lead to variation in teaching practice and student performance, which might potentially affect teachers' CF practice and students' reaction to it.

School Contexts

One school—Green River Charter School¹—was founded in 2007, and the Chinese immersion program runs from Pre-K to 6th grade. It is an alternating-day immersion model, which provides equal instructional time in English and Chinese. In other words, students alternate English and Chinese days, and move between Chinese and English classrooms on the appropriate day. The alternation results in 5 days of English instruction and 5 days of Chinese instruction in a two-week period. It is thus a partial immersion program with half of the class time being devoted to teach subject matter through Chinese. Instruction in English begins in the kindergarten.

The other program is in Red Rock Charter School, and the program provides total immersion with 90% to 100% of time dedicated to immersion teaching. It is an International Baccalaureate (IB) world school with multilingual immersion programs. Notably, the school opened in 2007, which makes it relatively young school, and the Chinese immersion program starts from Pre-K and runs through 8th grade. Students enrolled in the Chinese immersion school are taught every subject in Chinese, with English Language Arts provided starting from the 2nd grade.

Curriculum

Both programs follow International Baccalaureate (IB) and Common Core State Standards (Common Core) as the guiding curriculum for the content area. The goal of the IB is to “develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect” (“Mission,” n.d., para. 4). To this end, both programs strive to develop

¹ Names of schools and participants are pseudonyms.

students who are independent, think critically, and become multilingual. All the teachers in my study claimed that they were all aware of the IB requirements and that they valued the IB spirit, which they considered to permeate their pedagogy. The Common Core set standards in mathematics and literacy, and was managed together with the IB by the two programs in designing lessons. The teachers reported that the Common Core mainly guided the design of math lessons, while they generally followed the IB to determine the topics for science/social Studies but also referred to the Common Core for the grade-level literacy standards. For the Chinese language, the two programs focused on different standards. The two teachers from the partial-immersion program reported they relied on the Standards for Foreign Language Learning (SFFL) (ACTFL, 2006), and the teachers from the total immersion programs reported that they focused more on the Young Chinese Test (YCT) standards (“YCT,” n.d.). The SFFL were developed by a coalition of national language organizations in the US, whereas the YCT standards were developed by the Confucius Institute Headquarters in China.

Daily schedule

The following two tables demonstrate the daily schedules of the four classes: two third-grade classes, one fourth-grade class, and one a fifth-grade class. The highlighted lessons were sessions being formally conducted in Chinese. The daily instructional time in Chinese was approximately 4 hours for the total immersion program and approximately 5 hours for the partial immersion program. Since the partial immersion program alternated days to teach in Chinese and in English,

students in the partial immersion received less instruction in Chinese weekly than those in the total immersion program.

During the Chinese instructional time, the lesson format in the partial immersion program was more diverse than that of the total immersion program: in addition to the core lessons such as math, Chinese language, and unit of inquiry (science/social Studies), the partial immersion program included several other forms of lessons to strengthen students' Chinese language as well as the subject knowledge development: teachers read to students a piece of a story related to the topic of the core lessons during the story time, and raised critical questions about the story; the morning exercise usually included body stretching and games incorporated with simple instructions in number, color and action words. Morning meeting was a time when students were prompted to talk about their life experience in Chinese on such topics as festivals, food, and sports. While Mary's class from the total immersion program did have a session of Daily Routine (when students were prompted to communicate in everyday Chinese on such topics as weather and date, and to supplement other lesson periods), the session period was short (15 minutes). Additionally, instruction in the partial immersion program was more uniformly structured, and the two teachers followed exactly the same lesson format; the teachers in the total immersion program had flexibility within core lesson periods, even though the form of lessons was less diverse than that of the partial immersion program.

Table 2 Schedule of the Total Immersion Program

Total Immersion (Red Rock Charter School)			
Mary's class (3 rd grade)		Sarah's class (5 th grade)	
8:00 am	Chinese language	8:00 am	Chinese language
8:30 am	English language arts	8:50 am	Special session
9:45 am	Science/Social Studies	9:50 am	English language Arts
11:00 am	Special sessions	10:50 am	Lunch
12:00 am	Lunch	11:20 am	Math
12:30 am	Daily routine	12:40 pm	Break
12:45 pm	Math	12:50 pm	Science/Social Study
2:30 pm	Outdoor activity	2:15 pm	Outdoor activity
3:00 pm	Dismissal	2:35 pm	Chinese language
		3:00 pm	Dismissal

Table 3 Schedule of the Partial Immersion Program

Partial Immersion (Green River Charter School)			
Jessica's class (3 rd grade)		Ella's class (4 th grade)	
8:10 am	Morning exercise	8:10 am	Morning meeting
8:30 am	Morning meeting	8:30 am	Morning exercise
8:50 am	Special session	9:00 am	Chinese Language
9:35 am	Dessert break	10:40 am	Special sessions
9:45 am	Story time	11:30 am	Lunch
10:05 am	Unit of inquiry²	12:05 pm	Story time
11:45 am	Lunch	12:25 pm	Unit of inquiry
12:20 pm	Outdoor activity	1:15 pm	Dessert break
12:55 pm	Math	1:30 pm	Math
2:15 pm	Chinese language	3:05 pm	Outdoor activity
3:20 pm	Dismissal	3:40 pm	Dismissal

Teacher collaboration and program support

Teachers in the two programs collaborated in a different way. Teachers in the total immersion program reported that they had one weekly meeting with other language teachers at the same grade level and one monthly meeting with other Chinese immersion teachers to discuss problems and share experiences. The two teachers from the partial immersion program reported that both had teamed with an English language teacher to teach a class, thus the lessons were planned in a collaborative way. Each team had two to three meetings every week to prepare

² Unit of inquiry is a name for science or social studies lessons.

lessons, reflect on teaching, and share experience. In addition, teachers working in the same grade level met occasionally to share teaching resources as well. In conclusion, teachers in the total immersion program worked more independently in lesson planning and preparation than those in the partial immersion program who shared leadership of one class with their English partner teacher.

Both teachers in the total immersion program mentioned the solidarity within the team of Chinese immersion teachers. They valued the team spirit that has been built within the group, and they considered the subsequent attachment and bonding of the team to be a great motivation. Conversely, the two teachers in the partial immersion program talked about the support from the perspective of how the program developed a well-structured immersion teaching model as well as how they were helped to obtain access to up-to-date standards and pedagogy.

3.3.2 Class Selection

Considering that the study involves stimulated-recall interviews with students to elicit their perception about CF provided by teachers—which requires the student participants to be old enough to be able to understand the interview instructions, take the interviews accordingly, and report their perceptions—I excluded classes that are at the lower elementary grade levels (K-2). Second, to include classes at the similar grade level for my study, I excluded secondary grade levels, because only one immersion program includes secondary grade level. Before the study was conducted, I visited the two programs, and got to know teachers teaching grades 3-5. I talked to each of them and observe the teaching of those who were interested in participating in the study informally to determine if they met the criteria.

3.3.3 Participants

The participants consisted of four teachers and the four immersion classes they taught. The teachers were teaching in the Chinese immersion programs: two teachers and their immersion classes in one program, and the other two in the other program. Most students (those permitted to participate in the study) in the four classes were involved in the observation/video-recording part. Information about the participants is listed in Table 4. Among the four teachers, Mary and Sarah were in the total immersion program: Mary taught 3rd grade, and seventeen students in her class participated the study; Sarah taught 5th grade, and eight 5th graders participated. Jessica and Ella taught in the partial immersion program: Jessica also taught 3rd grade, and ten 3rd graders participated; Ella taught 4th grade, and fourteen 4th graders participated. All teachers were females and born in China, speaking Mandarin Chinese as their first language. Three of them had earned their master's degrees in second language education in the US; one teacher, Mary, earned her master's degree in education outside of the US. Although the teachers' experiences in immersion teaching varied—Mary had over eight years of Chinese immersion teaching experience and Sarah had over three years of teaching experience in the Chinese immersion program, whereas Jessica and Ella had worked in the Chinese immersion program for less than three years—all four of the teachers began teaching as a Chinese immersion teacher. All of the student participants speak English as their first language, and started learning Chinese in kindergarten through immersion. Their Chinese language proficiency level was measured by formal standardized tests and informal assessments (such as teacher observation and in-class assignments). This

study did not obtain the test results due to the confidentiality rule. However, teachers provided the proficiency level range in their interviews: Mary reported that most of her students were at YCT-Level 1 or YCT-Level 2 (basic), and very few of them were working toward YCT-Level 3 (intermediate); Sarah reported that most of her students passed YCT-Level 3, although one or two were still at YCT-Level 2; Jessica reported that most of her students were at novice high (based on SFFL) with one or two exceptional ones working towards intermediate low; and Ella reported that most of her students were at the level of intermediate low or intermediate mid. In addition, both Jessica and Ella mentioned that most of their students performed less competently on reading than on speaking, listening, and writing.

Table 4 Participant information

Program	Total Immersion		Partial Immersion	
Teacher	Mary	Sarah	Jessica	Ella
Gender (teacher)	Female	Female	Female	Female
Age (teacher)	mid 40s	mid 30s	late 20s	mid 20s
Teaching experience	> 8 years	> 3 years	> 2 years	> 1 year
Grade level	3 rd grade	5 th grade	3 rd grade	4 th grade
Number of students who participated the study	17	8	10	14
Age (student)	8-9 years old	10-11 years old	8-9 years old	9-10 years old

3.3.4 Procedure and Rationale

To examine the oral CF in the classroom context, the study has included three main procedures: videotaping/observation, stimulated recall, and individual interview. Videotaping conversations in classrooms generates naturalistic data, and it has the potential to help researchers gain a deeper understanding of the social and contextual nature of language use—an understanding that might be difficult to obtain in experimental laboratory conditions (Gass & Makey, 2007a). While videotaping the

lessons, as a non-participant researcher, I presented in the classroom and observed the lessons. In doing observations, the researcher may discover complex interactions in natural social settings. In particular, observational work can help researchers understand the physical, social, and linguistic contexts where language is used. Direct observations take place in the natural field setting and “observational data represent a firsthand encounter with the phenomenon of interest rather than a secondhand account of the world obtained in an interview” (Merriam, 1998, p. 94). Direct observations also enable researchers to obtain a fresh perspective on the event or phenomenon when participants are not able to give precise or objective descriptions through interviewing.

Stimulated recall sessions were conducted to explore learners’ cognitive process for dealing with CF. According to Gass and Mackey (2000), stimulated recall is “one subset of a range of introspective methods that represent a means of eliciting data about thought processes involved in carrying out a task or activity,” and there are two assumptions underlying the introspective method. One is that “it is possible to observe internal process in much the same way as one can observe external real-world events,” and the other is that “humans have access to their internal thought processes at some level and can verbalize those processes” (p. 1). In other words, humans’ mental processes can be verbally reported, and the primary aim of introspective methods is to uncover cognitive processes that are not evident through simple, direct observations. Stimulated recall can prompt participants to recall thoughts they had while engaging in the event, which is based on the assumption that some tangible reminder, such as a video clip, can enhance the access to memory

structures. Empirical support for this method can be found in Bloom's (1954) study, which attempted to verify the reliability of recall. The study showed that recall was 95% accurate when recalls were prompted a short period of time after the event (approximately 48 hours). Therefore, stimulated recall is a useful and reliable tool to investigate the interest of this study, which is a particular cognitive process—perceiving or noticing gaps between learner utterance and target language form through teachers' provision of CF.

3.4 Data Collection

A valid research study rests upon multiple sources of evidence, and data is collected in a triangulation fashion. Collecting data from multiple sources leads to the complexity and entirety of the study. The data of this study were collected through classroom videotaped observations, stimulated recall, individual interviews, as well as documents such as students' work and teachers' lesson plans.

3.4.1 Videotaping/Observations

The observations were only during the Chinese instruction time. For the observations, I paid 10-15 visits to each classroom, and each visit lasted for 3-4 hours. During each visit, I videotaped the classroom teaching and filled out observational protocols. The lessons I observed and videotaped in each classroom include Chinese literacy, math, science/social Study. Considering the video quality, a total of approximately 120 hours (around 30 hours for each class) of video-recordings were chosen for the data analysis. As I visited each class at least twice (on separate days: one day for the informal observation of the teacher's instruction during the

selection stage, and the other day for recruiting student participants) prior to the formal observations, students were used to my presence in the classroom. To conduct the observation, I sat in the back of the classroom and took notes during the whole-class instruction and followed the teacher to a group or an individual when group or individual instruction occurred. While observing the class, I filled out the observational protocol, which described how the lesson was carried out generally, such as topic of the lesson and the flow of lesson, as well as interactional context for feedback moves.

I videotaped each lesson period that I observed. According to Duff (2008), audiotaping and videotaping are important methods for recording mechanics in classrooms. They “helps preserve the linguistic character of interactions, and videotaping in particular allows researchers to better attend to nonverbal aspects of language interaction, such as gestures, participants’ orientation to various media in their environment, eye gaze, and so on” (p. 139). As nonverbal exchanges are indispensable techniques when teachers provide feedback, videotaping is well-suited for my study to record every detail of teacher-student interactions. I placed a video camera at the back of the classroom where the camera could capture the entire class during whole-class instruction; during the group or individual instruction, I placed the camera in a place closer to the teacher, where it could capture the individual teacher-student interaction. The video-recordings were the primary data source, and the observational notes served to supplement the videotaping. The observational protocol is provided in Appendix A.

3.4.2 Stimulated Recall

I invited 6 focus students from each class (a total of 24 students) to attend two stimulated recall sessions. Both sessions took place during my last few visits to the classrooms, because by then I had become familiar with each teacher's style of providing feedback. Each session lasted for 50-60 minutes. Each stimulated recall session resulted in 10 video clips, and each clip is a CF episode in which teachers responded to students' non-target-like utterances with feedback techniques. The 10 video clips were selected according to the teacher-student interaction during the whole-class or group instruction, so that the CF occurring in each clip could perhaps be noticed by more students. The selection of students was based on the fact that they were direct or indirect recipients of the feedback that occurred in the 10 video clips. The video clips were viewed by the focus students within 24 hours after the event in order to ensure the students' memory quality. During each stimulated recall session, I arranged the chosen students to sit as a group and played the video recording of the lesson that they had been involved in. Before showing them the video, I gave each of them a sheet of paper with instructions and questions (in English) for this stimulated recall session. I gave them time to read the paper, explained the instructions to them, and provided them with opportunities for asking any question they had. The instructions emphasized that they had to talk about what they thought when they were engaging in the original interaction with the teacher, rather than provide their explanations of what they did in the video. They answered questions after they watched each video clip. Participants could choose to respond to questions in Chinese or English. The questions typically included the following: What were you thinking

when the teacher said that to you? What did you notice? What did you think that made the teacher say so? Although I emphasized the fact that they needed to provide response regarding the interaction that happened during the class, I made sure that students did not know the exact answer I wanted from them by giving the option of not providing any response, or simply, “I forgot”. In this way, the study was more reliable, as students would not give any made-up response resulting from the pressure of giving answers. Before the session, I watched the video recording alone and marked any moment when CF occurred as “CF episodes.” The stimulated recall instruction and question sheet appended in Appendix B.

I also conducted two stimulated recall sessions with teachers to elicit data about teachers’ intent and reflections on providing CF. The four teachers watched the same video clips from the two sessions, but they participated individually and at a separate time with students. The questions changed to: What were you thinking when you said this to the student? What did you notice from the student’s utterance? Why did you say that? Both teachers’ and students’ recall comments were audio-recorded. The purpose of conducting stimulated recall was to determine whether students accurately perceived the feedback; that is, whether students noticed the corrective or modeling information contained in teachers’ feedback. I also used teachers’ reflections to triangulate the coding of video transcripts.

3.4.3 Interview and Document Collections

There were two individual interviews conducted with four teachers. The first one took place once I had recruited the teacher participants, in which I inquired as to their prior training and teaching experiences, their personal beliefs and knowledge

about immersion teaching, as well as their knowledge of the students, including students' age, native language, and Chinese language level. The second interview was conducted following the completion of the classroom observations, and the goal was to reveal teachers' thoughts about CF and also their reflections on the teaching; specifically, what had worked and what needed improvement, as well as their thoughts about the administration of their immersion program. Interviews were semi-structured and lasted around 30 minutes. Both interviews were audio-recorded; interview protocols can be found in Appendix C.

Documents, as another important data source, are different from interviews and observations, because they are not prepared for research purposes. They are a ready-made source of data, and they have the advantage that they do not “intrude upon or alter the setting,” nor are they “dependent upon the whims of human beings whose cooperation is essential for collecting good data through interviews and observations” (Merriam, 1998, p. 112). I reviewed a set of documents to support the data from observations, stimulated recall, and interviews. Documents I collected fall into two categories: public documents of the school and teachers' teaching materials. Public documents include the school mission and regulations, class rules, and curriculum, from which I generated context data of each immersion classroom. Teaching materials consisted of textbooks and lesson plans. Reviews of these documents yield data about the details of what should be taught and about the expectations for students.

3.4.4 Timeline

The timeline is as shown in Table 5. First, I contacted program coordinators and principals of the two the school sites to get permission to collect data. Through the initial contact, I gained access to the general information of each immersion program, student population and the teacher teams as well as the leadership teams. As soon as I got permission to do the data collection, I selected appropriate teacher participants and their classes. Following the selection and recruiting process, I piloted the study by observing and videotaping one immersion class for a day and conducting the stimulated recall interview with 2-3 students from the class. After the pilot study, I conducted the research formally.

Table 5 Timeline

Actions			Time
Initial contact with research sites and obtaining permissions			January-February 2015
Pilot			April 2015
Recruit participants			August-September 2015
Data collection	Mary's class	observations/video-recording, stimulated recall sessions, interviews, document collection	September 2015
	Sarah's class	observations/video-recording, stimulated recall sessions, interviews, document collection	October 2015
	Jessica's class	observations/video-recording, stimulated recall sessions, interviews, document collection	November 2015-January 2016 ³
	Ella's class	observations/video-recording, stimulated recall sessions, interviews, document collection	November 2015-February 2016

3.5 Data Analysis

Data analysis is “the process of making sense out of the data. And making sense out of data involves consolidating, reducing, and interpreting what people have

³ Since Jessica and Ella were teaching in the partial immersion program, which alternates days to teach subjects in English and Chinese, I could collect data from the two classes around the same time.

said and what the research has seen and read” (Merriam, 1998, p. 178). Nature of the data analysis is of both statistical and descriptive. The dataset comprises observational notes, transcripts of video-recordings, stimulated recall comments of students and teachers, transcripts of interviews with teachers, and collected documents.

3.5.1 Transcribing

Data collection was the first step in my data analysis, and it was through that I acquainted myself with the preliminary data. I transcribed the selected video recordings of classroom observations, stimulated recall responses, as well as audio recordings of teacher interviews. Table 6 provides a summary of the data sources for transcribing.

Table 6 Summary of the amount of data source for transcribing

	Mary	Sarah	Jessica	Ella
Lesson-recordings	30h 13m	29h 22m	29h 27m	30h 11m
Teacher stimulated recalls	59m	61m	68m	61m
Student stimulated recalls	122m	103m	126m	124m
Teacher interviews	51m	50m	51m	41m

3.5.2 Coding

I started coding documents while I was collecting them to ensure that I would be able to keep the coding contingent to the actual classroom situation along the process. Coding is a process “assigning some sort of shorthand designation to various aspects of data so that [the researcher] can easily retrieve specific pieces of data” (Merriam, 1998, p. 164). Thus, coding helped me to organize the data in a systematic manner and to link the data to the conceptual framework of my study as well. The first step of the coding process for the transcripts was to identify the students’ non-

target-like or incorrect utterances. Then I checked to see if there were any teacher reaction following the non-target-like or incorrect utterances, including verbal or non-verbal interactions (e.g., body language or facial expression). The teacher reaction could contain a CF or not. Next, I identified student responses to the teacher reaction. A teacher-student interaction initiated by students' non-target-like or incorrect utterance was coded as an interactional episode. Within interactional episodes, coding was subjected to three categories in order to identify (a) provision and type of CF, (b) interactional context, and (c) learner response to CF. This method of coding was applied following Lyster and Ranta's (1997), along with Ranta and Lyster's (2007) conceptualization and classification of CF, as well as Oliver and Mackey's (2003) identification of interactional contexts. While the preselected categories of CF were a guidance for coding, I remained alert for other possible patterns that might emerge. As Altheide (1987) states, "Although categories and 'variables' initially guide the study, others are allowed and expected to emerge throughout the study" (p. 68). When coding the data based on the video recordings of lessons, my observational notes were also checked to ensure the consistency and validity. However, the coding schemas for lesson videos, stimulated recall sessions, and interviews were different due to the nature of the data for these three categories. Details are presented below.

Type of corrective feedback

Based on the classification of Lyster and Ranta (1997) and Ranta and Lyster (2007), CF generally follows six patterns, and is broadly categorized into reformulation and prompt (as discussed in Section 2.2.1). Examples are as follows:

Elicitation:

T: *Il vit où un animal domestique? Où est-ce que ça vit?*

[Where does a pet live? Where does it live?]

S: *Dans un maison.* [In a house-M.]

T: *Dans...? Attention.* [In...? Careful.]

S: *Dans une maison.* [In a house-F.]

Metalinguistic clues:

S: *Parce qu'elle cherche, euh, son, son carte.*

[Because she's looking for, um, her, her card-M.]

T: *Pas son carte.* [Not her card-M.]

S: *Euh, sa carte?* [Um, her card-F?]

Clarification request:

S: *La marmotte, c'est pas celui en haut?*

[The groundhog-F, isn't it the one-M at the top?]

T: *Pardon?* [Excuse me?]

S: *La marmotte, c'est pas celle en haut?*

[The groundhog-F, isn't it the one-F at the top?]

Repetition:

S: *Puis ma grand-mère a acheté du laine pur faire euh... tu sais... [And my grandmother bought some wool-M to make um...you know...]*

T: *Du laine?* [Wool-M?]

S: *De la laine.* [Wool-F.]

Explicit correction:

S: *Le Renaud gris, le loup, le coyote, le bison et la gr...groue.*

[The gray fox, the wolf, the coyote, the bison, and the cr...cran.]

T: *Et la grue. On dit 'grue'.* [And the crane. We say 'crane.']

(Lyster, 2007, p. 108-110)

Recast:

S: *Umi ya, umi ya...*

[The sea and, the sea and...]

T: *Mizuumi ya...*

[The lake and...]

(Lyster & Mori, 2006, p. 271)

In this study, the classification of CF discussed in previous studies (Lyster & Ranta, 1997; Ranta & Lyster, 2007) was used as a guideline for coding the type of CF, and I also kept the coding open for the possible generation of new categories.

Interactional contexts

The interactional context is the contextual focus of teacher-student interactions. Following Oliver and Mackey's (2003) discussion of interactional context in content-based ESL classrooms, four patterns of interactional contexts were coded: (a) content, (b) management, (c) communication, and (d) language. During content exchanges, the teacher imparts knowledge or elicits information from the students about a curriculum, content, or skill area. Management exchanges are the situations where the teacher talks about the organization of the lesson, including turn takings, materials, movements, and behaviors. During communication exchanges where the context is identified as being focused on communication, the teacher usually engages the class in using the L2, as for discussions of common interest, sharing news, or debating events. During language-focused exchanges, the teacher usually focuses on the L2 language itself. Examples can be found as follows:

Content exchange:

S: Octopus?

T: No, because an octopus has teeth.

S: Jelly fish?

Management exchange:

S: How many?

T: What—how many turns?

S: No.

Communication exchange:

S: "X" said he ride the bike with "X" and—and he fall in—and then he fall in the bum.

T: Oh, he fell down, oh dear.

S: And I fall on the botty.

("X" replaces the child's name.)

Language exchange

S: One upon a time...

T: No, we say once.

S: Once.

(Oliver & Mackey, 2003, p. 523-624)

It should be noted that coding of the context was based on the focus of each particular teacher-student interactional episode, rather than on the broader context of an instructional period. Thus, a language-focused interaction could also occur when the instruction dealt with the content, and vice versa. Communicative and management-oriented interactions could flow into every part of the instructional time, whether or not it was generally dedicated to the language or content. In addition, this study did not code different types of linguistic errors, such as semantic, phonological, morphosyntactic, or lexical errors (Mackey et al., 2000). However, the coding of interactional context indicates whether the teacher's CF targets a language error, content error, communicative error, or management error. For example, in language contexts, CF provided by the teacher targets students' linguistic errors, and in content contexts, CF focuses on students' content errors.

Learner response

Learner response was coded according to students' immediate response to the CF provided by teachers. Given the different coding systems used in the previous studies—learner uptake and no uptake by Lyster & Ranta (1997) and Lyster & Mori (2006) vs. modified output and no modified output by Oliver & Mackey (2003)—I conducted an inductive coding process.

Stimulated recall comments

Two rounds of coding were performed on students' stimulated recall comments. The first round involved coding the comments according to the students' noticing of CF, and Kim and Han (2007) provided a guideline: (a) noticing the CF, (b) not noticing the CF, or (c) no comment. The second round assigned sub-categories

to those comments coded as noticing or not noticing the CF. According to Schmidt (1990, 1993), noticing is a conscious perception, and it was operationalized as interpretative comment on the intent of teachers' responses to students' utterances. In this study, the accurate perception of CF was measured by whether the learner noticed the CF and also knew what was being corrected by the CF. Therefore, subcategorizing the noticing of the CF, in particular, was a further investigation of learner perception accuracy.

In addition, the teachers' stimulated recall comments were used to determine teachers' intention of providing a particular CF, namely, what was corrected and in what way the CF was delivered, and thus to determine whether the students' interpretive comments overlap with teachers' intentions.

Interviews and documents

Data based on teacher interviews and documents were preliminarily coded as: program context, teacher background information, student information, teachers' general perception on CF, teachers' comments on immersion teaching, the program administration, and in-service professional training. While the coding was proceeding, I began the process of category construction and content analysis. According to Merriam (1998), content analysis historically has been very quantitative in nature. When it came into use in qualitative studies, it was recognized that "although categories and 'variables' initially guide the study, others are allowed and expected to emerge throughout the study" (Altheide, 1987, p. 68). For my study, I searched through the interview and document data to sort out the teachers' thoughts and comments with regard to the research questions, especially the last question. To

do this, I began with reading transcripts, field notes and documents, and also marked notes, comments, and queries that struck me as potentially relevant or important to my study. After working through the entire transcripts and field notes in that way, I went back to my notes and comments and grouped them accordingly. I used the same method when I read the next set of data, and the grouping list was analyzed for generating a master list of concepts to constitute a primitive “classification system reflecting the recurring regularities or patterns” (Merriam, 1998, p. 181). These patterns thus become categories for subsequent data sets. The following table summarizes the data that were collected:

Table 7 Summary of coding and data source

Data Type	Coding Source	Collecting Method
Interactional episodes	Interactional moves between teacher and students initiated by students’ non-target-like or incorrect utterances	Observation/videotape
Type of CF	Teachers’ reactions to students’ non-target-like utterances	Observation/videotape
Interactional contexts	Interactional moves between teachers and students	Observation/videotape
Learner response	Student immediate responses to teachers’ CF	Observation/videotape
Students’ perception of CF	Students’ stimulated recall comments	Stimulated recall
Teachers’ intentions in providing CF	Teachers’ stimulated recall comments	Stimulated recall
Program context	Public documents of schools, interviews with teachers	Interview and document collection
Teachers’ and students’ background information	Public documents of schools, interviews with teachers	Interview and document collection
Teachers’ reflections on CF and immersion teaching	Interviews with teachers	Interview

3.5.3 Statistical Tool

Although the current study is exploratory in nature and the research results are mostly descriptive, one of inquiries that it aims to investigate is the interdependence among the variety of CF, the pattern of learner response, and the type of interactional

context subjects to the statistical analysis. A Chi-square test was used to examine whether there was statistically significant relationship among the coded categories. According to Agresti and Finlay's (2009) interpretation of the Chi-square test, there are two characteristics of it that match the particular features of the data set of this study. First, the type of data that is applicable for the Chi-square test is the categorical data rather than the numerical data. For example, responses to questions such as "Do you have a dog?" or "What is your gender?" are categorical, whereas responses to "How long do you own your dog?" or "How many boys in your class?" are numerical. My data, exploring the type and pattern of the occurrence, response, and context of the CF, are thus categorical and meet the prerequisite of the test. Second, the Chi-square test is mainly used to examine whether distributions of categorical variables differ from each other; in other words, it compares tallies or counts of various categories, the function of which also meets the goal of my research.

3.6 Positionality

The researcher plays an influential role in the classroom research. By being involved in the entire process of data collection, it is difficult for the researcher to be objective in the analysis. Merriam (1998) has suggested that specifying the researcher's positionality might reduce the effect of subjectivity. Elucidating the researcher's role in the process helps the researcher stay as objective as possible and increase the credibility of the study. In this section, I elucidated my role in the research process.

I am a native speaker of Chinese, and have been formally trained as a language teacher, teacher educator, and applied linguistics researcher through

undergraduate and graduate study as well as work experience. Before starting this research project, I had already gained relevant knowledge about the research topic through taking doctoral courses and working as a Graduate Assistant (GA) in a teacher education program. In particular, the coursework and the GA work have equipped me with the theoretical and practical knowledge in immersion teaching, immersion program design, and immersion teacher training.

Working as a GA, I need to provide academic and administrative support for the Chinese language teacher program in the Department of Teaching and Learning, Policy and Leadership, which allows me to work closely with student teachers and their mentor teachers who were potential participants in my study. Part of my job responsibilities was assisting my GA supervisor with the student teacher internship. As the university internship coordinator, my GA supervisor served as a liaison between the university and the schools that hosted student teachers for the teaching practicum. My supervisor's job was to work with mentor teachers to help student teachers develop their teaching competence and evaluate their performance; responsibilities included conducting observations and meeting with mentor teachers and student teachers to discuss their progress. As the assistant, I was involved in these responsibilities, primarily by helping my supervisor to conduct student-teaching observations and providing suggestions to help the student teachers improve their teaching. One of the teacher participants in my study was also a teacher mentor and I had contact with her regarding the issues of student teachers. However, neither did I evaluate student teachers' performance, nor did I negotiate with the mentor teacher

about mentoring issues. Therefore, being an assistant to the internship coordinator did not directly impact my role as a research participant in this study.

I was mindful that my special relationship with my participants might still indirectly influence the trustworthiness of the research. To solve this issue, I kept my roles as researcher and as assistant separate. I also kept my research visits to the school and the visits related to my GA work separate. I further assured my participants that my research would not evaluate their teaching performance, so that they could be more relaxed about my presence.

3.7 Conclusion

The study is an observational classroom study. Data collection utilized qualitative tools which included conducting two rounds of interviews with teachers, observing and videotaping lessons, as well as conducting stimulated recalls with students and teachers. The lesson videotapes were the study's primary data source for examining the distribution of CF, learner response to CF, as well as the relationship between the interactional context and the opportunities for, provision of, and use of CF. Stimulated recall data were the source for investigating learner perception of CF as well as its relation to feedback type and addressee type. Data from the individual interviews with teachers were mainly the source of background information concerning students, the teachers themselves, and the program, as well as the school. Documentation, such as public documents about the schools and the teaching materials, served as supplemental information for the analysis.

Chapter 4: Findings—Patterns of Corrective Feedback

This chapter includes the research results from multiple sources and types of data collected for the current study. More specifically, the chapter provides a thorough depiction of the patterns of oral CF provided by the four immersion teachers and factors that affect the provision and reception of the feedback. The comprehensive description of different aspects of CF presents the commonalities and particularities of the cases and also provides a basis for the transferability to other similar contexts.

4.1 Distribution of Different Types of Corrective Feedback

This section presents findings that describe the patterns of CF occurring in the four classes, which answers the research question (1a) *What is the distribution of each type of corrective feedback?*

4.1.1 Provision of Corrective Feedback

Table 8 presents a summary of the total number of interactional episodes initiated by students' non-target-like or incorrect utterance in four classes, along with the frequency of CF provided by each teacher. Compared to other three cases, there were more interactional episodes initiated by students' errors occurring in Sarah's class (681). In other words, Sarah had more opportunities for providing CF, followed by Ella (644). Mary and Jessica both taught 3rd grade and encountered similar amount of CF opportunities (578 vs. 576), which were relatively lower than the cases of Sarah and Ella. When encountering CF opportunities, all four teachers tended to provide CF than not to do so: more than half of students' non-target-like productions attracted

feedback (66.8% vs. 33.2%, 66% vs. 34%, 61.6% vs. 38.4%, 63.2% vs. 36.8%).

Among the four, both Mary and Sarah, in the total immersion program, provided CF more frequently than Jessica and Ella, who were in the partial immersion program.

However, the Chi-square test indicates that there was no significant difference in frequency of CF among the four classes, $\chi^2(3, N=2479)=4.598, p=.204$.

Table 8 Occurrences of CF

	Mary	Sarah	Jessica	Ella
CF Opportunities	578	681	576	644
CF	386 (66.8%)	450 (66%)	355 (61.6%)	407 (63.2%)
No CF	192 (33.2%)	231 (34%)	221 (38.4%)	237 (36.8%)

$\chi^2(3, N=2479)=4.598, p=.204$

4.1.2 Types of Corrective Feedback

The four teachers were found to use eight different types of CF: four types of reformulations including explicit correction, recast, elaboration, and confirmation; and four types of prompts including elicitation, clarification request, metalinguistic clue and repetition. As discussed in the literature, reformulations are types of CF that provide the correct/target-like model, while prompts are those types of CF that elicit, instead of provide the correct/target-like model. Compared to the classification framework of Lyster and Ranta (1997) and Ranta and Lyster (2007) that categorize CF into six types, two more types emerged from my data, namely elaboration and confirmation. Elaboration refers to the type of CF that reformulates the error and provides additional information or explanation about the target-like/correct model, and confirmation is defined as the type of CF that is provided when the learner's utterance is not clearly understood, the teacher speculates the message in the question form by providing one or two possible target-like or correct model(s). Examples of

the eight types of CF are listed below, with the definition of each type being re-presented.

(1) Types of CF

(a) *Explicit correction: clearly indicating that the student's utterance was incorrect, the teacher provides the correct form.*

S: 20 乘以, 乘以 4 等于。。。 [Twenty multiplied, multiplied by 5 equals to...]

T: 不是乘以, 是除以。 [Not multiplied by, divided by.]

S: 除以 [divided by]

(b) *Recast: without directly indicating that the student's utterance was incorrect, the teacher implicitly reformulates the student's error, or provides the correction.*

S: 其实月亮自己不会发光, 它只是发出太阳—— [In fact, the moon does not give off light of its own, it gives off sun—]

T: 反射! [Reflects!]

S: 反射太阳发出的光。 [Reflects sunlight.]

(c) *Elaboration: the teacher reformulates the error and provides additional information or explanation.*

S: 第四个问题, 现在星期几? [The fourth question, what's the day now?]

T: 今天星期几? 有两个是“现在”的, 有三个是“今天”的问题, 今天是几日? 今天是星期几? 今天天气怎么样? 有一个是“年”的问题。这个问题是“今天是星期几?” [What's the day today? There are two questions with “now”, and three questions with “today”: what's the date today? What's the day today? What's the weather today? There is one question with “year”. This question is “what's the day today?”]

S: 今天是星期几? [What's the day today?]

(d) *Confirmation: when the student's utterance is not clearly understood, the teacher speculates the message in question form by providing one or two possible correct models.*

S: 我可以有一个纸? [Can I have a sheet of paper?]

T: 是纸巾吗? [Is it a tissue?]

S: 是。 [Yes.]

(e) *Elicitation: the teacher directly elicits the correct form from the student by asking questions, by pausing to allow the student to complete the teacher's utterance, or by asking students to reformulate the utterance.*

S: 今天的天气是晴天。 [It's sunny today.]

T: 唉，停，(老师用手指指脑袋，示意学生想一想) 今天是不是晴天？ [Well, stop, (the teacher points to her head signaling students to think about it) is it sunny today?]

S: 不是，今天是阴天。 [No, it's cloudy today.]

(f) *Clarification request: the teacher indicates that the message has not been understood or that the student's utterance contained some kind of mistake and that a repetition or a reformulation is required.*

S: 你不知道中文？ [You don't know Chinese?]

T: 嗯？ [Huh?]

S: 你不知道怎么写这个的中文，吗？ [Don't you know how to write this word in Chinese?]

(g) *Metalinguistic Clue: without providing the correct form, the teacher poses questions or provides comments or information related to the formation of the student's utterance.*

S: 是二十一日。 [The 21st.]

T: 句子，而不是词。 [Sentence, not phrase.]

S: 今天是二十一日。 [Today is the 21st.]

(h) *Repetition: the teacher repeats the student's error and adjusts intonation to draw the student's attention to it.*

S: 怎么写十五？ [How to write fifteen? (The student meant to say "food"; in Chinese, "fifteen" and "food" are very similar in pronunciation.)]

T: 十五？ [Fifteen?]

S: 十五，十，十，食物的物。 [F..., fi....fifteen, f..., as in food.]

Elaborations are either explicit or implicit. When teachers in my study provided elaborations upon the students' errors, they tended to present a correct model followed by detailed information about the correct model and explanation of what is incorrect or how it is connected to related content. Thus an elaboration can be considered as an elaborated version of recast or explicit correction. In the example (1c) above, the teacher corrected the student's choice of time adverbial by presenting comparative scenarios in which the two time adverbials “现在 (now)” and “今天 (today)” should be used; the teacher first reformulated the question, and then lead

students' attention to the five model questions written on the white board, explaining in which cases they should use “今天 (today)”. In this case, by emphasizing usage of a time adverbial, the teacher explicitly indicated what was wrong. An elaboration can also be implicit, and teachers tend not to explicitly point out what is corrected in an implicit case. A less explicit example of elaboration is shown in example (2):

(2) Implicit elaboration

S: 到了教堂，和牧师，他们问我要叫什么，他说，“Matthew 是好。” [(We) went to the church, and the pastor; they (parents) asked for my name. He said, “Matthew is good.”]

T: Matthew 是个好名字，我明白了。所以你的名字不是你爸爸妈妈给你起的，你的名字是爸爸妈妈把你带到教堂，问教堂里的人，从圣经里来的。他们觉得 Matthew 是个好名字，所以叫 Matthew，很好！ [Matthew is a good name, I see. So you were not named by your parents, but your parents asked someone in the church to give you a name from the Bible. They thought Matthew was a good name, so you were named Matthew. Good!]

S: 这是我编的，哈哈。。。 [I made this up! Hahaha....]

In the above example, the student talked about how he was named and a part of the utterances “Matthew 是好 (Matthew is good)” was ungrammatical (in this case, “是 (is)” should be omitted). The teacher first implicitly reformulated the sentence and then re-presented the correct model by embedding the model in her interpretation of the student's naming story. The teacher was not just restating what the student said with correct utterance, but also adding her interpretation and comment based on their previous interaction (the student had mentioned that his name had come from the Bible in the previous interactional episode). In this case, the teacher did not emphasize the error, but reformulated the error and restated the correct model in the communicative context. Like a recast, the elaboration provided in this example was implicit, but there was more information accompanying the feedback

including connecting the focal utterance (which is the target of the CF “Matthew 是好 (Matthew is good)”) to the related content (the entire naming story).

A confirmation is similar to a clarification request in the sense that teachers use these two types of CF to clarify what students have said when their utterances were not clearly understood. However, a confirmation not only suggests an unclear or non-target-like utterance had been made, but also includes a correct model, a feature not presented in a clarification request. In example (1d), the linguistic form contained in what the student said did not match meaning implied by the context, and the teacher was guessing at what he meant by providing a possible target-like linguistic form as a question (in that context the student was sweating, which suggested he might need a tissue). A clarification request elicits the correct model from the students themselves instead of its being provided by the teacher. The context for example (1f) was that the student had asked the teacher to write down a Chinese character that he did not know how to write, but the teacher was hesitant since the writing of the character had just been reviewed, which led to the student’s misunderstanding that the teacher might not know the word. The initial utterance of the student was not understood by the teacher, and the teacher’s response “嗯 (Huh?)” led to a successful self-repair from the student.

4.1.3 Frequency of Different Types of Corrective Feedback

Table 9 presents the number and percentage distribution of different CF types in each class. Overall, the eight types of CF occurred across all the four classes. One common pattern on the choice of the CF type among the four teachers was that recast and elicitation the top two most frequent CF types, and the total count of the two

types comprised the majority proportion of the feedback in each class: recasts and elicitations comprised 37% and 27% respectively of all CF moves in Mary’s class (64% in total); 36.7% and 28% in Sarah’s class (64.7% in total); 39.2% and 40.6% in Jessica’s class (79.8% in total); and 47.2% and 20.4% in Ella’s class (67.6% in total). While Mary, Sarah and Ella used recasts most frequently, and elicitations and elaborations followed, Jessica provided elicitations most frequently, although the difference in frequency between the elicitation and recast was slight. Jessica did not use elaborations (4.5%) as frequently as Mary, Sarah and Ella did (13.7%, 10.4%, and 12.3%). Overall, recasts occurred most frequently (40%), followed by elicitations (29%), whereas repetitions were used least frequently (2.55%). Clarification request and metalinguistic clue as well as explicit correction were seldom used (less than 10%).

Table 9 Distribution of CF across the four classes

CF Type	Mary	Sarah	Jessica	Ella	Overall
Clarification request	27 (7%*)	16 (3.6%)	21 (5.9%)	15 (3.7%)	5%
Elicitation	104 (27%)	126 (28%)	144 (40.6%*)	83 (20.4%*)	29%
Metalinguistic clue	16 (4.1%)	22 (4.9%)	22 (6.2%)	24 (5.9%)	5.28%
Repetition	3 (0.8%*)	28 (6.2%*)	3 (0.8%*)	10 (2.4%)	2.55%
Elaboration	53 (13.7%*)	47 (10.4%)	16 (4.5%*)	50 (12.3%)	10.23%
Explicit correction	35 (9.1%*)	26 (5.8%)	5 (1.4%*)	18 (4.4%)	5.18%
Recast	143 (37%)	165 (36.7%)	139 (39.2%)	192 (47.2%*)	40%
Confirmation	5 (1.3%*)	20 (4.4%*)	5 (1.4%)	15 (3.7%)	2.7%

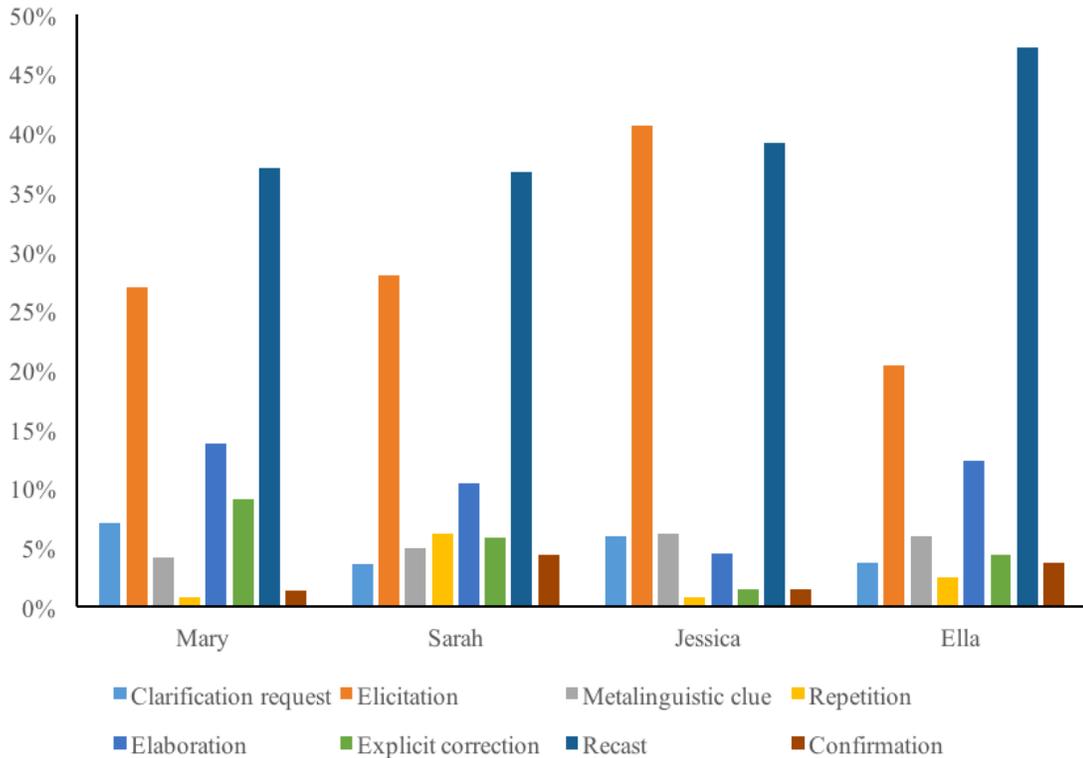
$\chi^2(21, N=1598)=123.912, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

In spite of the general commonality, the statistical result indicates that each teacher has a distinctive selection of the CF techniques when they spot errors in student utterances. The Chi-square test showed that there was a significant interaction between the frequency of each type and the immersion class, $\chi^2(21, N=1598)$

=123.912, $p < .0001$. There was a significantly greater proportion of clarification requests provided by Mary than by the other three teachers (27% vs. 3.6%, 5.9% and 3.7%). There was a significantly greater proportion of elicitations provided by Jessica (40.6%), while elicitations were significantly fewer in Ella's class (20.4%). Repetitions occurred significantly more frequently in Sarah's class (6.2%), while Mary and Jessica used repetitions in a significantly less frequently level (0.3%). There was a significantly higher proportion of elaborations provided by Mary (13.7%) and significantly less proportion of elaborations by Jessica (4.5%). Mary used explicit corrections significantly more often, whereas Jessica used explicit corrections significantly less often. The occurrence level of recasts was significantly higher in Ella's class than in the other three (47.2% vs. 37%, 36.7% and 39.2%). Sarah had a significantly higher preference for confirmations (4.4%) than others, whereas Mary had a significantly lower preference for confirmations (1.3%). No significant difference was found regarding the proportion of metalinguistic clues among the four classes, indicating the teacher had similar preferences for this type of CF.

Figure 4 provides a visual presentation of the general pattern of the occurrence of the different CF types in the four classes. In summary, all four teachers had a higher preference for recasts and elicitations, and elaboration is another important feedback technique used by the teachers. In addition, the frequency of each type of CF varied significantly across the different classes, except for the metalinguistic clue.

Figure 4 The types of CF provided in the four classes



4.2 Learner Response to the Corrective Feedback

This section presents findings that characterize students' responses to different types of CF, in order to answer research question (1b): *How do learners respond to various types of oral corrective feedback?*

4.2.1 Overview of the Learner Response

Students of the four classes were found to have three patterns of immediate response to CF provided by teachers: modifying their initial utterance, not modifying the initial utterance, and not responding to the CF at all, which I termed as modification, no modification, and no immediate response. Examples are provided as follows:

(3) Learner response patterns

a. *Modification: utterance following the CF in an attempt to modify the original non-target-like/incorrect utterance*

S: 月球，我们又叫它月亮，它离地球最近，太空人到过月球很多次了，发现那里很荒凉，只有很多圆形山。 [The moon (the scientific terminology), we also call it moon (the term used in daily life), it is the closest to the earth. Astronauts have been to the moon many times. They found the moon is very desolate with only round mountains on it.]

T: 环形山。 [Craters.]

S: 只有很多环形山。 [With only craters on it.]

b. *No modification: utterance following the CF contains no modification of the original non-target-like/incorrect utterance*

S: 十八乘以二等于九。 [Eighteen multiplied by two equals nine.]

T: 这个是除以。 [This is “divided by”.]

S: 十八乘以二等于九。 [Eighteen multiplied by two equals nine.]

c) *No response: no verbal or nonverbal reaction from students after a CF is provided*

S: 这个，日照。 [This, sunlight.]

T: 耳罩。 [Earmuff.]

S: (学生跑走了。) [(The student ran away.)]

Table 10 Frequency of learner response in four classes

Learner Response	Mary's class	Sarah's class	Jessica's class	Ella's class
Modification	191 (49.5%)	238 (52.9%)	228 (64.2%*)	180 (44.2%*)
No modification	104 (26.9%)	122 (27.1%)	68 (19.2%*)	113 (27.8%)
No response	91 (23.6%)	90 (20%)	59 (16.6%*)	114 (28%*)

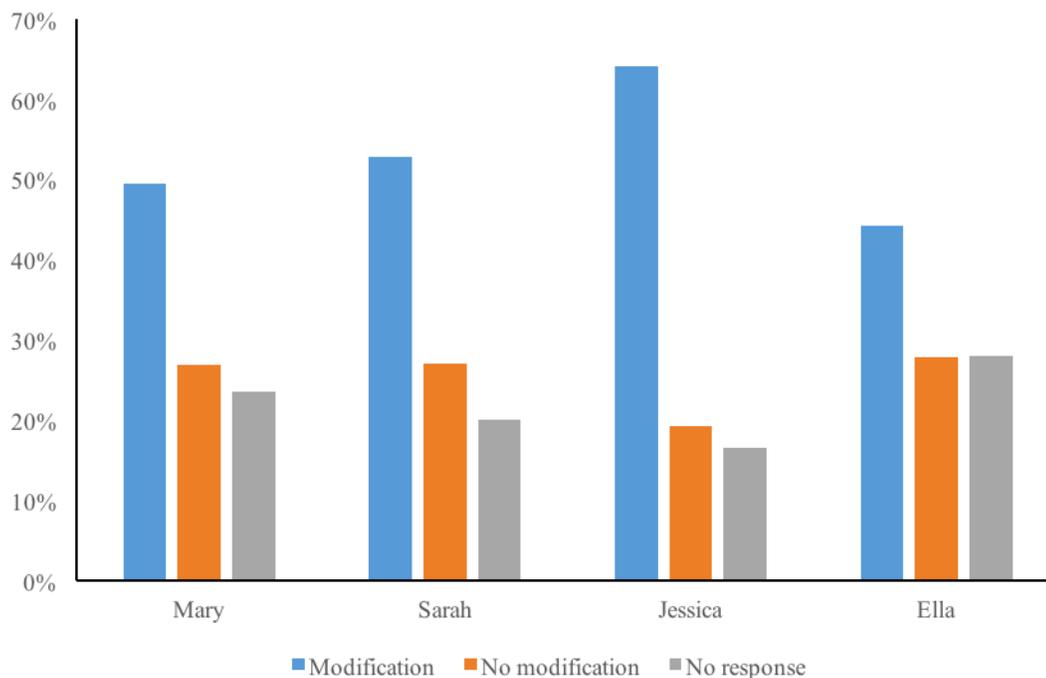
$\chi^2(6, N=1598)=35.024, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 10 displays the number and percentage of each pattern of learner response in the four classes, and Figure 5 demonstrates the distribution visually. It is apparent that students from all four classes most often responded to the teacher's CF by modifying their initial output: near or beyond half of the response contained modification (44.2% to 64.2%). Generally, students in classes of Mary, Sarah and Jessica had similar response profiles: they modified their initial errors most frequently and were least likely to have no response to teachers' CF, whereas for Ella's students,

the chance to react without modification or without any response was close (27.8% vs. 28%).

The difference between the proportion of response by class was significant, $\chi^2(6, N=1598) = 35.024, p < .0001$. Compared to the other three, CF provided by Jessica led to a significantly greater proportion of modification (64.2%), whereas Ella's CF led to a significantly lower proportion of modification (44.2%). While the proportion of no modification in classes of Mary, Sarah and Ella remained similar (26.9%, 27.1% and 27.8%), Jessica's class stood out in this regard by having a significantly lower proportion of no modification (19.2%). The proportion of no response in Ella's class was significantly greater than that of the other three, suggesting that Ella's students were most likely to react to the teacher's CF by giving no immediate response.

Figure 5 Patterns of learner response



4.2.2 Learner Response and the Type of Corrective Feedback

It was found that learner response varied following different types of CF, and this relationship between learner response and type of CF was consistent across the four classes, according to the significant results shown by the Chi-square tests: $\chi^2(14, N=386) = 86.6, p < .0001$, $\chi^2(14, N=450) = 114.862, p < .0001$, $\chi^2(14, N=355) = 84.371, p < .0001$, $\chi^2(14, N=407) = 147.197, p < .0001$. Details are presented below by class.

Mary's Class

Table 11 Learner response following each type of CF in Mary's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Modification	15 (55.6%)	82 (78.8%*)	10 (62.5%)	0 (0%)	13 (24.5%*)	19 (54.3%)	51 (35.7%*)	1 (20%)
No modification	10 (37%)	16 (15.4%*)	3 (18.8%)	3 (100%*)	22 (41.5%*)	3 (8.6%*)	44 (30.8%)	3 (60%)
No response	2 (7.4%*)	6 (5.8%*)	3 (18.8%)	0 (0%)	18 (34%)	13 (37.1%)	48 (33.5%*)	1 (20%)
Total	27	104	16	3	53	35	143	5

$\chi^2(14, N=386) = 86.6, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 6 Patterns of learner response following each type of CF in Mary's class

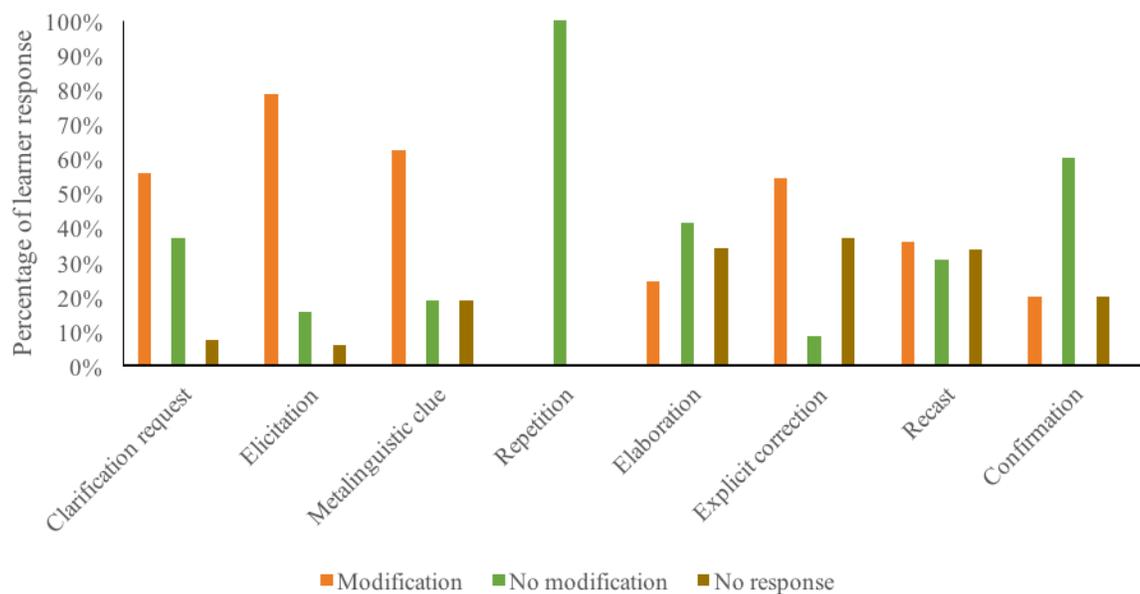


Table 11 and Figure 6 display the number and percentage of learner response following eight types of CF in Mary’s class. The figure shows that the three types of prompts—clarification request, elicitation, and metalinguistic clue—triggered similar patterns of learner response. That is, students were more likely to respond to these three types of CF by modifying their initial errors, since the modification constituted more than half of the learner response following these three types of CF (55.6%-78.8%). However, another type of prompt—repetition—did not lead students to modify their initial errors at all. Among the four types of reformulations, explicit correction was the one most likely to lead students to attempt to modify their errors (54.3%), followed by recast (35.7%); both elaboration and confirmation were more likely to bring responses without modifications (41.5% and 60%). Across the eight types of CF, a significantly greater proportion of modification was triggered by elicitation; a significantly greater proportion of learner response without modification was brought by repetition, whereas significantly lower proportion of it was triggered by explicit correction.

Sarah’s Class

Table 12 Learner response following each type of CF in Sarah’s class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Modification	5 (31.2%)	96 (76.2%*)	19 (86.4%*)	19 (67.9%)	9 (19.1%*)	13 (50%)	72 (43.6%*)	5 (25%*)
No modification	11 (68.8%*)	21 (16.7%*)	1 (4.5%*)	6 (21.4%)	23 (48.9%*)	3 (11.5%)	43 (26.1%)	14 (70%*)
No response	0 (0%)	9 (7.1%*)	2 (9.1%)	3 (10.7%)	15 (32%*)	10 (38.5%*)	50 (30.3%*)	1 (5%)
Total	16	126	22	28	47	26	165	20

$\chi^2(14, N=450)=114.862, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 7 Patterns of learner response following each type of CF in Sarah’s class

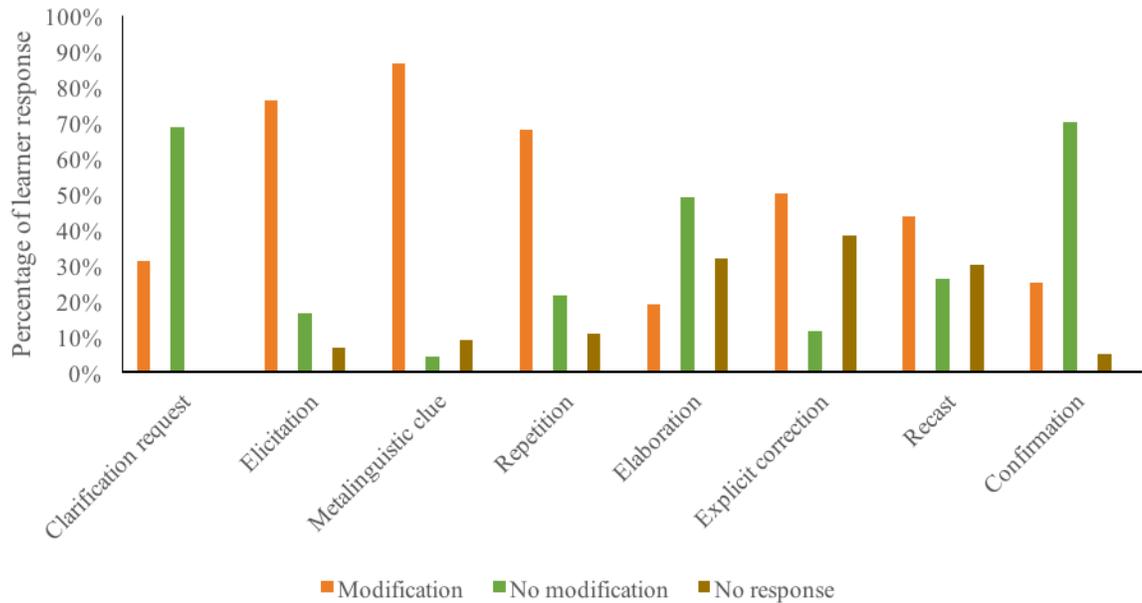


Table 12 and Figure 7 demonstrate the occurrence frequency of varied learner response in Sarah’s class. Similar to the Mary’s class, most types of prompts triggered modifications, although repetition rather than clarification request was among these types of prompts (67.9%), together with elicitation (76.2%) and metalinguistic clue (86.4%). Another similarity with Mary’s class was that explicit correction and recast were the two types of reformulations that were more likely to lead to modifications (50% and 43.6%), and elaboration and confirmation triggered more responses without modifications (48.9% and 70%). A cross-CF type comparison revealed a different tendency in learner response in Sarah’s class: a significantly greater proportion of modification was found following metalinguistic clues; a significantly greater proportion of responses with no modification occurred following confirmations, and significantly lower proportion of it was observed after the provision of metalinguistic clues.

Jessica's Class

Table 13 Learner response following each type of CF in Jessica's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Modification	11 (52.4%)	115 (79.9%*)	18 (81.8%)	3 (100%)	4 (25%*)	2 (40%)	74 (53.2%*)	1 (20%*)
No modification	9 (42.9%*)	25 (17.3%)	0 (0%*)	0 (0%)	6 (37.5%)	0 (0%)	24 (17.3%)	4 (80%*)
No response	1 (4.7%)	4 (2.8%*)	4 (18.2%)	0 (0%)	6 (37.5%*)	3 (60%*)	41 (29.5%*)	0 (0%)
Total	21	144	22	3	16	5	139	5

$\chi^2(14, N=355)=84.371, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 8 Patterns of learner response following each type of CF in Jessica's class

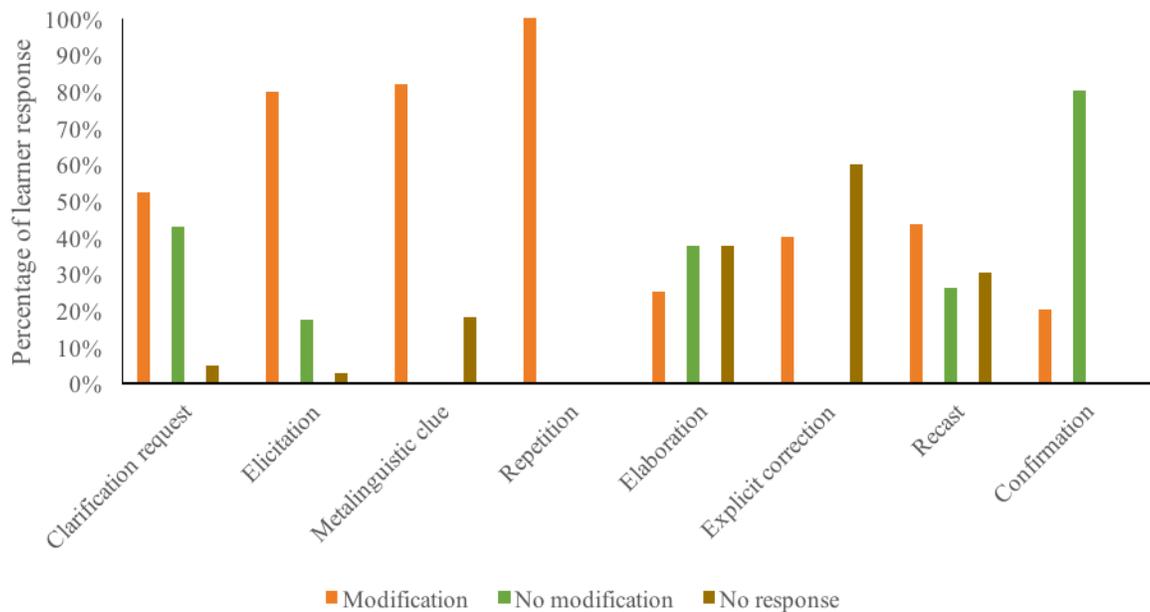


Table 13 and Figure 8 show how students in Jessica's class reacted to each type of CF. Unlike the case of Mary and Sarah, all four types of prompts led to a greater proportion of modifications: 52.4% of responses following clarification requests, 79.9% of responses following elicitations, 81.8% of responses following metalinguistic clues, and 100% of responses following repetitions. Among the reformulations, only recasts invited more modifications (43.6%). Across the various

types of CF, repetition attracted the largest proportion of modifications, whereas confirmation was the one that triggered the significantly least proportion of modifications. In addition, confirmation was also the one that led to the significantly greatest proportion of responses without modifications, while explicit correction was the one that was most likely to result in students offering no immediate response.

Ella's Class

Table 14 Learner response following each type of CF in Ella's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Modification	10 (66.7%)	69 (83.1%*)	22 (91.6%*)	6 (60%)	4 (8%*)	4 (22.2%)	65 (33.9%*)	0 (0%)
No modification	4 (26.7%)	12 (14.5%*)	1 (4.2%*)	3 (30%)	16 (32%)	9 (50%*)	57 (29.7%)	11 (73.3%*)
No response	1 (6.6%)	2 (2.4%*)	1 (4.2%*)	1 (10%)	30 (60%*)	5 (27.8%)	70 (36.5%*)	4 (26.7%)
Total	15	83	24	10	50	18	192	15

$\chi^2(14, N=407)=147.197, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted residuals greater than +2 or less than -2)

Figure 9 Patterns of learner response following each type of CF in Ella's class

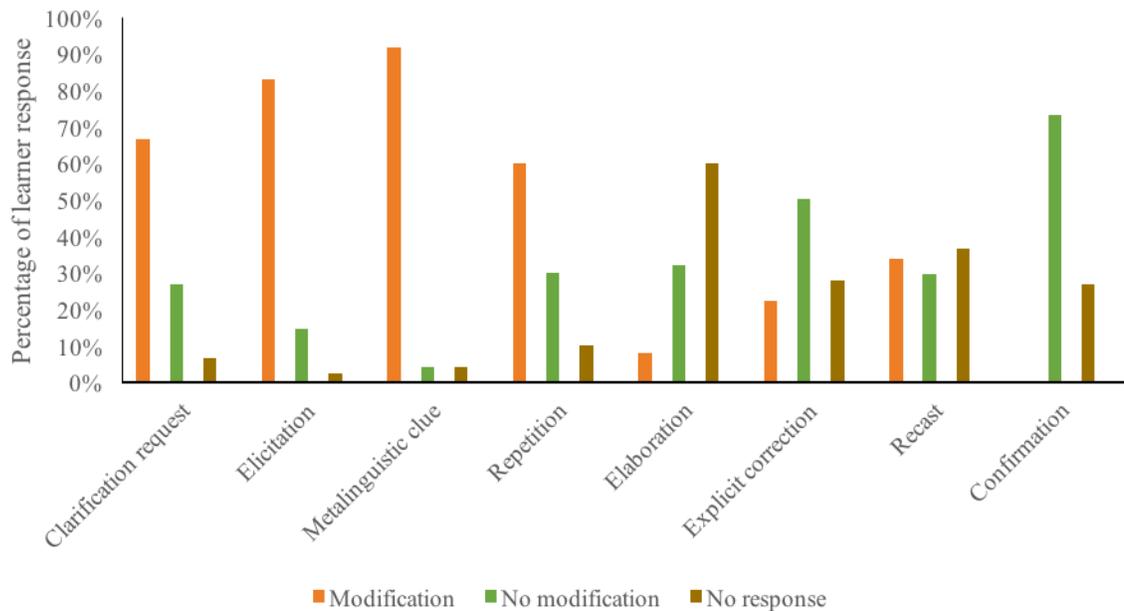


Table 14 and Figure 9 illustrate the frequency of varied learner response depending on the type of CF in Ella’s class. Similar to the case of Jessica, the way students reacted to the teacher’s prompts by modifying their errors was dominant: 66.7% of responses following clarification requests, 83.1% of responses following elicitations, 91.6% of responses following metalinguistic clues, and 60% of responses following repetitions were modifications. Among the reformulations, recasts brought about a relatively greater proportion of modifications (33.9%) than the other three types (elaborations, explicit corrections, and confirmations), whereas confirmations did not lead to any modification. Nevertheless, the proportion of no response was slightly higher than that of modification after recasts. Across all types of CF, metalinguistic clue was the one that triggered the largest proportion of modifications, while confirmation was the one that attracted the largest proportion of no modifications. Further, elaboration was the type of CF that led to the largest proportion of no response.

Table 15 Response with modification following each type of CF

	Mary’s class	Sarah’s class	Jessica’s class	Ella’s class	Overall
Clarification request	55.60%	31.20%	52.40%	66.70%	51.48%
Elicitation	78.8%	76.2%	79.9%	83.1%	79.5%
Metalinguistic clue	62.5%	86.4%	81.8%	91.6%	80.58%
Repetition	0%	67.9%	100%	60%	57%
Elaboration	24.5%	19.1%	25%	8%	19.15%
Explicit correction	54.3%	50%	40%	22.2%	41.63%
Recast	35.7%	43.6%	53.2%	33.9%	41.6%
Confirmation	20%	25%	20%	0%	16%

Table 15 presents a summary of the proportion of learner response with modification following each type of CF. One similarity of the four classes was that prompts were more likely to lead students to modify their initial non-target-like or incorrect utterances (greater than 50%) than reformulations (less than 50%). Overall, the metalinguistic clue and elicitation led to greater proportions of learner response with modification than other types of CF (averaging 80.58% and 79.5%), followed by the repetition and clarification request (averaging 57% and 51.48%). The explicit correction and the recast were the two types of reformulations that triggered relatively greater proportions of response with modification (averaging 41.63% and 41.6%). In addition, students in the two 3rd grade classes produced totally different responses to teachers' repetitions of their initial errors. Mary's students from the total immersion program didn't modify their errors at all, while Jessica's students from the partial immersion program modified all the errors.

4.2.3 A Closer Look

The above subsections examine students' reactions to the teacher CF from a quantitative view, reporting the overall patterns of the wide range of the learner response and its association with the CF type. This subsection explores the learner response through a qualitative lens for the purpose of presenting patterns of learner response in the actual classroom contexts. In the general forms that the learner response manifested—modification, no modification, or no response—there was a diversity that emerged from each pattern. Modification included two possibilities: successful modification of the initial error or unsuccessful modification of the error. During the teacher-student interactions where CF was provided, even if the student

were aware of the corrective hints, the successful repair of the mistake would not necessarily be achieved in a single attempt. It was very likely that the student's immediate attempts at repair were unsuccessful, an example of which can be found in (4). In the example, the student was practicing a list of verbs by reading aloud and explaining their meaning. He did not pronounce the verb in a correct way and was still partially incorrect after the teacher provided a recast.

(4) Unsuccessful modification

S: 看级。 [Look grade (unmeaningful verb).]

T: 参加。 [Participate.]

S: 看加。 [Look add (unmeaningful verb).]

In addition, based on the characteristics of different types of CF, prompts tended to bring about student-generated modification, while reformulations were more likely to result in repetition or incorporation of teachers' reformulations. The student-generated modification is either self-repair or peer-repair. Peer-repair tended to take place in the whole-class instruction time or during the group interaction, when the direct recipient of the feedback failed to respond to the CF and instead, a peer who noticed the CF provided a repair of the error made by the direct recipient. An example can be found in (5):

(5) Peer-repair

T: 这个是他们生活的什么？ [What is this they live in?]

S1: 国家。 [Country.]

T: 国家？ [Country?]

S2: 环境！ [Environment!]

For those instances where students did not respond with modification, the unmodified responses present a diversity as well. Four subcategories were identified:

keep the same error, not attend to the focus of the CF, show acknowledgement with the CF, and query about the CF. Examples and definitions were listed in (6):

(6) No modification

a. *Keep the same error: students' utterances following the CF keep the original non-target-like form or incorrect answer*

S: 十八乘以二等于九。 [Eighteen multiplied by two equals nine.]

T: 这个是除以。 [This is "divided by."]

S: 十八乘以二等于九。 [Eighteen multiplied by two equals nine.]

b. *Not attend to the focus of CF: students respond to other information accompanying the CF, or they shift the topic*

S: 这个是我的造句。 [These are my make sentences.]

T: 对啊, 你的句子, 还有很多句子, 可以写很多。 [Right, your sentences. More sentences, you can write more.]

S: 我可以, 我可以说话地球, 我知道地球可以转。 [I can, I can say the earth, I know the earth revolves.]

c. *Show acknowledgement with the CF: students show they recognize, understand, agree with or accept the CF.*

T: 三组, 如果我说两栏, 应该是横着放, 还是竖着放? [Group 3, if I say two columns, is it horizontal or vertical?]

S: 横着。 [Horizontal.]

T: 我说两栏。 [I said two columns.]

S: 是, 我知道。 [Yes, I know.]

d. *Query about the CF: students raise questions about the CF, deny what is suggested by the feedback, or comment on the CF*

S: 零除以二等于二。 [Zero divided by two equals two.]

T: 没有东西可以拿, 怎么有二? [If there is nothing to take, how can you get two?]

S: 但是, 为什么她写。。。写二? [But why did she write...write two?]

In the case of "Keep the same error", students tended to repeat the same non-target-like utterance even after the teacher provided the CF. It was possible that the CF was implicit and was not perceived by the student; or the student noticed the CF but failed to repair the error. The second possibility was differentiated from the case of

unsuccessful modification: although students might attempt to repair the error in both cases, the difference was that there was no evidence of change observed in the responses in the case of no modification. Taking (6a) as an example, the student confused “除以(divide)” with “乘以(multiply)”, and kept the same mistake after a relatively explicit correction from the teacher. It was the pronunciation of the two terms (*chú yǐ* [divide] and *chéng yǐ* [multiply]) rather than the meaning that confused the student. Based on my observations, the exact same CF targeting the same error occurred several times in this class, and students knew what had been corrected but failed to modify the initial mistake at all, which was confirmed during the stimulated-recall interview with students (as discussed in detail in section 4.4). That was still a case of no modification, since there was no evidence of verbal change in the learner utterance. However, in an unsuccessful modification, the evidence that students attempted to repair the error can be observed directly from their utterance, as example (4) shows. In the example, a partial modification can be observed from the initial *kàn jí* (look-grade) to the modified *kàn jiā* (look-add), although not the target *cān jiā* (participate).

If students did not attend to the target of the CF, it probably meant that the student failed to notice the corrective information, or noticed the correction but did not respond with a modification. In example (6b), the student mistakenly used the verb “造句(make sentences)” as a noun “句子(sentences)”, and the teacher implicitly corrected the error by recasting. The teacher also provided additional comments based on the context by encouraging the student to make more sentences, and the student seemed to respond to the encouragement by making another sentence immediately

instead of correcting the mistake. Therefore, both “keep the same error” and “not attend to the target of the CF” did not necessarily suggest that learners were totally unaware of the CF; rather, learners could possibly have noticed the corrective information but failed, or chose not, to make changes in their original error, or may have been distracted by other information contained in the teachers’ reactions. The case of “show acknowledgement with the CF” was the more direct indication that learners noticed the CF provided by the teacher, as exemplified in (6c): the student gave a wrong definition of the term “栏 (column),” the teacher prompted him to revise his answer, and the student recognized the teacher’s correction by pointing out he knew what the teacher meant. According to my observation of the following interaction with the teacher, this student knew the meaning of “栏 (column),” but chose the wrong word to define it since he confused the meanings between “横 (horizontal)” and “竖 (vertical).” The case of “query about the CF” suggested that students not only noticed the CF but also were processing the correction or corrective information conveyed by the teacher utterance. The example in (6d) showed that the student realized “二 (2)” was not the answer expected by the teacher after the teacher provided a comment denying the answer (elicitation). However, he did not immediately give a revised answer but asked the teacher why “二(2)” was not the right answer. Therefore, the four subcategories of the learner response with no modification indicated that the noticing or processing of the CF could also happen even if there were no evidence of error modification by the students.

Table 16 Learner response in Mary's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Successful modification	9 (33.3%)	57 (54.8%)	8 (50%)	0 (0%)	7 (13.2%)	14 (40%)	48 (33.5%)	1 (20%)
Unsuccessful modification	6 (22.2%)	25 (24%)	2 (12.5%)	0 (0%)	6 (11.3%)	5 (14.3%)	3 (2.1%)	0 (0%)
No response	2 (7.4%)	6 (5.8%)	3 (18.8%)	0 (0%)	18 (34%)	13 (37.2%)	48 (33.5%)	1 (20%)
Keep the same error	9 (33.3%)	4 (3.8%)	0 (0%)	2 (66.7%)	0 (0%)	1 (2.8%)	4 (2.8%)	1 (20%)
Show acknowledgement with the CF	0 (0%)	3 (2.9%)	1 (6.2%)	0 (0%)	4 (7.5%)	1 (2.8%)	13 (9.1%)	2 (40%)
Not attend to the focus of CF	1 (3.7%)	6 (5.8%)	2 (12.5%)	1 (33.3%)	16 (30.2%)	1 (2.8%)	26 (18.2%)	0 (0%)
Query about the CF	0 (0%)	3 (2.9%)	0 (0%)	0 (0%)	2 (3.8%)	0 (0%)	1 (0.7%)	0 (0%)
Total	27	104	16	3	53	35	143	5

Figure 10 Distribution of learner response in Mary's class

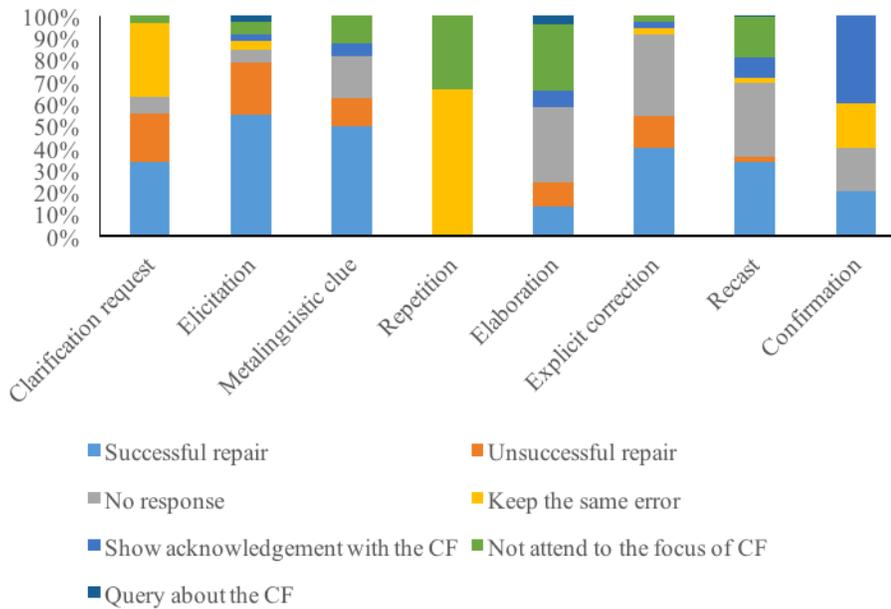


Table 16 and Figure 10 illustrate the distribution of learner response to each type of CF following a detailed classification of learner response in Mary's class. Due to the small token in the number of one learner response category after each CF type, which affects the validity of statistical results, the Chi-square test was not conducted. It can be seen from the results that in instances where students modified their initial

non-target-like utterances, successful modification appeared more often than unsuccessful modification. In cases where students did not modify their initial utterances, a greater proportion of learner responses keeping the same error appeared following the clarification requests and repetitions (33.3% and 66.7%), a greater proportion of learner responses showing acknowledgement with the CF appeared following confirmations (40%), and a greater proportion of learner response that did not attend to the CF focus occurred following the elaborations, recasts, and metalinguistic clues (30.2%, 18.2%, and 12.5%). Learner response with query about the CF occurred least frequently, and appeared most often after elaborations (3.8%).

Table 17 Learner response in Sarah's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Successful modification	4 (25%)	62 (49.2%)	14 (63.6%)	14 (50%)	6 (12.8%)	12 (46.2%)	66 (40%)	5 (25%)
Unsuccessful modification	1 (6.25%)	34 (27%)	5 (22.7%)	5 (17.9%)	3 (6.4%)	1 (3.8%)	6 (3.6%)	0 (0%)
No response	0 (0%)	9 (7.1%)	2 (9.1%)	3 (10.7%)	15 (31.9%)	10 (38.5%)	50 (30.3%)	1 (5%)
Keep the same error	10 (62.5%)	5 (4%)	1 (4.5%)	2 (7.1%)	0 (0%)	0 (0%)	1 (0.6%)	1 (5%)
Show acknowledgement with the CF	0 (0%)	9 (7.1%)	0 (0%)	2 (7.1%)	14 (29.8%)	2 (7.7%)	23 (13.9%)	9 (45%)
Not attend to the focus of CF	0 (0%)	5 (4%)	0 (0%)	1 (3.6%)	9 (19.1%)	0 (0%)	19 (11.5%)	4 (20%)
Query about the CF	1 (6.25%)	2 (1.6%)	0 (0%)	1 (3.6%)	0 (0%)	1 (3.8%)	0 (0%)	0 (0%)
Total	16	126	22	28	47	26	165	20

Figure 11 Distribution of learner response in Sarah's class

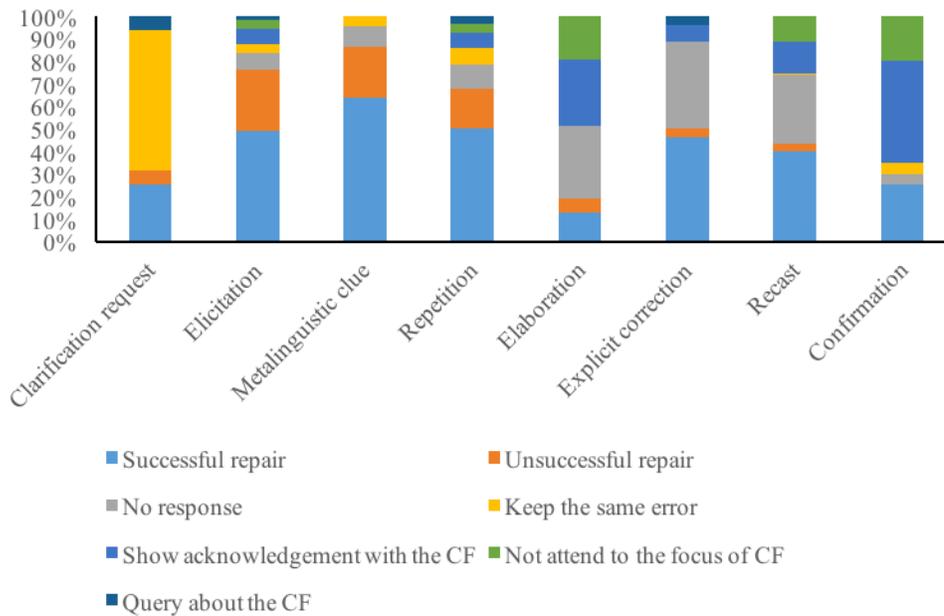


Table 17 and Figure 11 demonstrate the distribution of the learner response following a more detailed classification in Sarah's class. Similarly, in cases where students produced modified utterances, successful modification occurred more frequently than unsuccessful modification following each type of CF. In instances where students responded to CF without any modification of the initial non-target-likeness, responses keeping the same error appeared most frequently following clarification requests (62.5%), responses showing acknowledgement with the CF occurred more often following elaborations and confirmations (29.8% and 45%), and responses that did not attend to the focus of the CF appeared more often following clarification requests (62.5%). Responses querying about the CF occurred least frequently and appeared only after clarification requests, elicitations, repetitions, and explicit corrections (6.25%, 1.6%, 3.6%, and 3.8%).

Table 18 Learner response in Jessica's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Successful modification	8 (38.1%)	92 (63.9%)	14 (63.6%)	2 (66.7%)	3 (18.75%)	2 (40%)	74 (53.2%)	1 (20%)
Unsuccessful modification	3 (14.3%)	23 (16%)	4 (18.2%)	1 (33.3%)	1 (6.25%)	0 (0%)	0 (0%)	0 (0%)
No response	1 (4.7%)	4 (2.8%)	4 (18.2%)	0 (0%)	6 (37.5%)	3 (60%)	41 (30.3%)	0 (0%)
Keep the same error	7 (33.3%)	13 (9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Show acknowledgement with the CF	0 (0%)	8 (5.5%)	0 (0%)	0 (0%)	3 (18.75%)	0 (0%)	10 (7.2%)	3 (60%)
Not attend to the focus of CF	2 (9.6%)	4 (2.8%)	0 (0%)	0 (0%)	3 (18.75%)	0 (0%)	14 (10.1%)	1 (20%)
Query about the CF	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	21	144	22	3	16	5	139	5

Figure 12 Distribution of learner response in Jessica's class

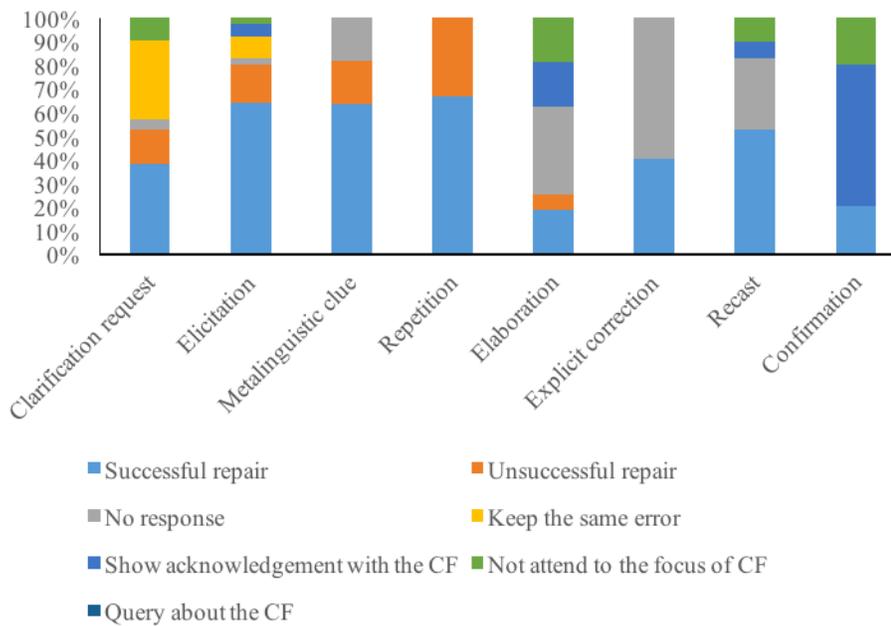


Table 18 and Figure 12 illustrate the distribution of learner response following a more detailed classification in Jessica's class. Similar to Mary and Sarah, for Jessica class, in cases where students modified their errors, they also produced a greater proportion of successful modifications than that of unsuccessful modifications following all forms of CF. In cases where students did not revise their non-target-

likeness, responses maintaining the same error appeared more frequently following clarification requests (33.3%); responses showing acknowledgement with the CF occurred more often following elaborations (18.75%) and confirmations (60%); responses that did not attend to the focus of the CF occurred more often following confirmations (20%). Interestingly, Jessica's student never responded to CF by querying about the CF.

Table 19 Learner response in Ella's class

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast	Confirmation
Successful modification	5 (33.3%)	31 (37.3%)	11 (45.8%)	1 (10%)	3 (6%)	4 (22.2%)	58 (30.2%)	0 (0%)
Unsuccessful modification	5 (33.3%)	38 (45.8%)	11 (45.8%)	5 (50%)	1 (2%)	0 (0%)	7 (3.6%)	0 (0%)
No response	1 (6.6%)	2 (2.4%)	1 (4.2%)	1 (10%)	30 (60%)	5 (27.8%)	70 (36.5%)	4 (26.7%)
Keep the same error	3 (20.1%)	1 (1.2%)	0 (0%)	0 (0%)	2 (4%)	1 (5.5%)	3 (1.6%)	1 (6.7%)
Show acknowledgement with the CF	1 (6.7%)	0 (0%)	0 (0%)	1 (10%)	7 (14%)	5 (27.8%)	16 (8.3%)	4 (26.7%)
Not attend to the focus of CF	0 (0%)	7 (8.5%)	0 (0%)	2 (20%)	7 (14%)	3 (16.7%)	38 (19.8%)	2 (13.3%)
Query about the CF	0 (0%)	4 (4.8%)	1 (4.2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (26.7%)
Total	15	83	24	10	50	18	192	15

Figure 13 Distribution of learner response in Ella's class

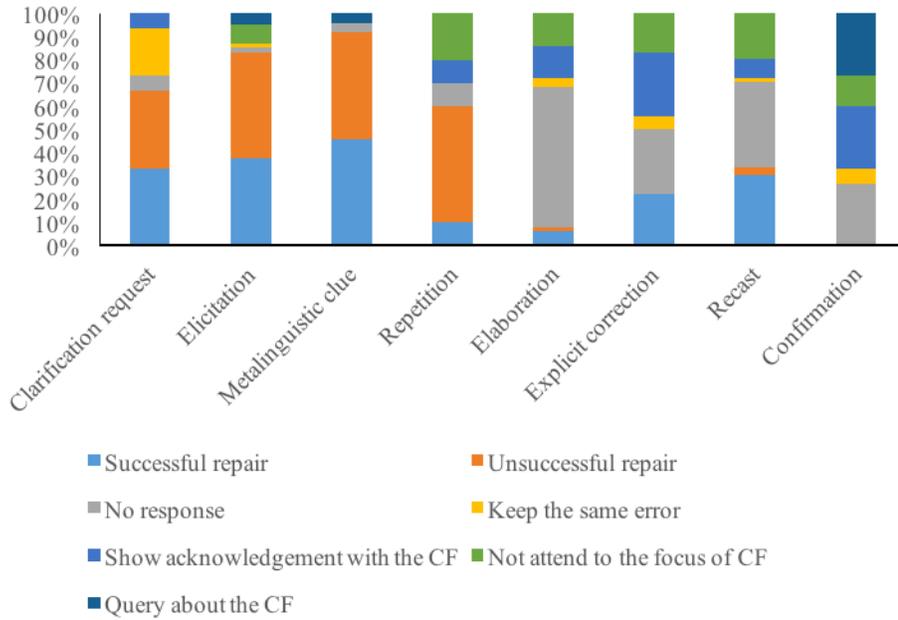


Table 19 and Figure 13 demonstrate the distribution of learner response following a more detailed classification in Ella's class. Different from the other three classes in instances where students responded to CF with modifications, students in Ella's class were more likely to produce more successful modifications than unsuccessful modifications following elaborations (6% vs. 2%), explicit corrections (22.2% vs. 0%), and recasts (30.2% vs. 3.6%), while they produced a greater proportion of unsuccessful modifications than of successful modifications following elicitations (45.8% vs. 37.3%) and repetitions (50% vs. 10%). In cases where students responded to CF without modifications, responses keeping the same error appeared more frequently following clarification requests (20.1%); responses showing acknowledgement with the CF occurred more often following explicit corrections (27.8%) and confirmations (26.7%); and responses not attending to the focus of CF appeared more regularly following repetitions (20%) and recasts (19.8%). Responses

querying about the CF occurred only after elicitations, metalinguistic clues, and confirmations.

Table 20 Learner response following recast

	Mary's class	Sarah's class	Jessica's class	Ella's class	Overall
Successful modification	33.50%	40%	53.20%	30.20%	39.23%
Unsuccessful modification	2.10%	3.60%	0%	3.60%	2.33%
No response	33.50%	30.30%	30.30%	36.50%	32.65%
Keep the same error	2.80%	0.60%	0%	1.60%	1.25%
Show acknowledgement with the CF	9.10%	13.90%	7.20%	8.30%	9.63%
Not attend to the focus of CF	18.20%	11.50%	10.10%	19.80%	14.90%
Query about the CF	0.70%	0%	0%	0%	0.18%

Given the controversy over the effectiveness of recast in classroom studies, the learner response following recasts is separately listed in Table 20. Overall, students were more likely to respond to recasts with successful modifications of their errors (39.23%). In instances where students responded to recasts without modifying their initial utterances, most of the time they either showed acknowledgement with the recast (9.63%) or responded without attending to what the recast targeted (14.9%); there was little chance for them to keep the same error in the response (1.25%) or query about the recast (0.18%).

To summarize, students of Mary, Sarah and Jessica were more likely to have successful modifications of their initial non-target-like utterances regardless of what type of CF provided by teachers. Ella's students had unsuccessful modifications more frequently when elicitations and repetitions were provided. In addition, when clarification requests were provided, students tended to produce responses that keep

the same error, while they tended to produce responses showing acknowledgement with the CF following confirmations. Students of Mary and Ella tended to produce responses that did not attend to the focus of the CF after recasts were provided. Except for Jessica's students, the students of other three classes tended to produce responses querying about the CF after elicitations.

4.3 Influence of the Contextual Factor

This section presents findings that describe how the interactional context affects the provision and reception of CF, answering the research question **(2) *Is there a relationship between the interactional context and (a) the occurrence of teachers' oral corrective feedback? and (b) the learner response to oral corrective feedback?***

4.3.1 Occurrence of Different Interactional Contexts

Four interactional contexts were identified based on Oliver and Mackey (2003). Definitions of each type of context are represented below along with examples from the four Chinese immersion classes:

(7) Four interactional contexts

a. *Content: during the context-focused interactional exchanges, the teacher is supposed to impart knowledge or elicit information from the students about a curriculum, content, or skill area.*

T: 六乘以九等于多少? (The teacher wrote the equation on the board while she asked the question.) [What's six multiplied by nine?]

S: 嗯。。。。。十四。 [uh....fourteen.]

T: 看看。 [Read.]

S: Forty-five! 四十五! 四十五! [Forty-five! Forty-five! Forty-five!]

b. *Language: interactional exchanges focusing on negotiating the linguistic form and meaning*

S: 小组长的助手。 [The group leader's assistant.] (The "assistant" in Chinese should be "zhù shǒu," not "bāng zhù shǒu" as the student said.)
 T: 小组长的助手, 小组长的助手。 [The group leader's assistant, the group leader's assistant.]
 S: (学生点头表示明白) [The student nodded his understanding.]

c. Communication: during communicative exchanges, the teacher usually engages the class in using the second language to communicate needs, discuss common interest, share news or debate events

S: 我不可以看⁴, 老师。 [I'm not allowed to see, teacher.]
 T: 哦, 你看不见。往后退, 孩子们。 [Oh, you can't see. Move back, kids.]
 S: 谢谢。 [Thank you.]

d. Management: during management-focused exchanges, the teacher talks about the organization of lessons including rules, materials, and behaviors.

T: 你们在走廊大声讲话, 老师会高兴还是不高兴? [Would I be happy or upset if you talk loud in the corridor?]
 S1: 高兴。 [Happy.]
 T: 为什么会高兴? ! [Why would I be happy?!]
 S2: 哦, 不高兴。 [Well, upset.]
 S1: 因为我们大声, 很吵。 [Because we are loud and noisy.]

Table 21 Occurrences of the four interactional contexts

	Mary's class	Sarah's class	Jessica's class	Ella's class
Content	208 (36%)	284 (41.7%)*	222 (38.5%)	214 (33.2%*)
Language	147 (25.4%)	246 (36.1%)	249 (43.2%*)	254 (39.5%)
Communication	115 (20%*)	49 (7.2%*)	35 (6.1%*)	111 (17.2%*)
Management	108 (18.6%*)	102 (15%)	70 (12.2%)	65 (10.1%*)
Total	578	681	576	644

$\chi^2(9, N=2479)=124.368, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 21 demonstrates the number and frequency of the occurrence of each context in the four classes. One similarity among the four classes was that content-focused and language-focused contexts were dominant, which with the addition of two accounted respectively for 61.4%, 77.8%, 81.7% and 72.7% of the total number

⁴ In this conversation, the student wanted to tell the teacher that he couldn't see the words written on the white board because someone blocked his sight. In this case, he should say "我看不见" instead of "我不可以看." "我不可以看" in Chinese denotes the meaning that "I'm not allowed to see something due to some reason", although the literal translation of "我不可以看" is "I can't see."

of contexts in each class. The two total immersion classes had the largest proportion of content-focused contexts (36% and 41.7%), while the language-focused context occurred most frequently in the two partial immersion classes (43.2% and 39.5%). Contexts that were management-focused and communicative contexts occurred much less frequently than the above two types of contexts: the management-oriented contexts occurred the least frequently in Ella’s class (10.1%) whereas the communicative context occurred least frequently in Jessica’s class (6.1%). The Chi-square test results show that the frequency of each type of context was related to which class the interactions occurred in.

4.3.2 The Interdependence of the Interactional Context and the Corrective Feedback

Table 22 lists the number and percentage of instances in which the CF was provided or not by different interactional contexts in Mary’s class. Mary was most likely to provide the CF in the language-focused interactions, and the percentage reached as high as 91.8%. The content-focused interactions also were accompanied by a greater proportion of CF (79.3%). On the other hand, Mary tended not to provide any CF in management-oriented interactions, with 64.8% of the errors left uncorrected. The Chi-square results indicated that whether the teacher provided CF or not was significantly associated with the context of interactions, $\chi^2(3, N=578)=137.469, p < .0001$.

Table 22 The provision of CF in each type of context in Mary’s class

	Content	Language	Communication	Management
CF	165 (79.3%)	135 (91.8%*)	48 (41.7%)	38 (35.2%*)
No CF	43 (20.7%)	12 (8.2%*)	67 (58.3%)	70 (64.8%*)
Total	208	147	115	108

$\chi^2(3, N=578)=137.469, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 23 lists the number and percentage of cases in which the CF was provided or not by the interactional context in Sarah’s class. Similarly to Mary, Sarah was also most likely to provide the CF in the context of language (90.7%), followed by the content context, whereas the management-oriented interactions attracted the least proportions of CF, with only 14.7% of errors being corrected. A significant association between the type of interactional context and the provision of CF was also shown by the Chi-square test, $\chi^2(3, N=681)=208.740, p < .0001$.

Table 23 The provision of CF in each type of context in Sarah’s class

	Content	Language	Communication	Management
CF	195 (68.7%*)	223 (90.7%)	17 (34.7%*)	15 (14.7%*)
No CF	89 (31.3%*)	23 (9.3%)	32 (65.3%*)	87 (85.3%*)
Total	284	246	49	108

$\chi^2(3, N=681)=208.740, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 24 displays the number and percentage regarding the provision of CF in four interactional contexts in Jessica’s class. Similarly, Jessica corrected students’ errors more often during the language-focused and content-focused interactions (84.7% and 56.3%), and CF occurred less frequently in the communicative and management-focused interactions (11.4% and 21.4%). A significant relation between the type of interactional context and the provision of CF was also indicated by the Chi-square test, $\chi^2(3, N=576)=144.036, p < .0001$.

Table 24 The provision of CF in each type of context in Jessica’s class

	Content	Language	Communication	Management
CF	125 (56.3%*)	211 (84.7%*)	4 (11.4%*)	15 (21.4%*)
No CF	97 (43.7%*)	38 (15.3%*)	31 (88.6%*)	55 (78.6%*)
Total	222	249	35	70

$\chi^2(3, N=576)=144.036, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 25 displays the number and percentage regarding the provision of CF in four interactional contexts in the Ella’s class. Similar to the other three classes, Ella

provided the CF more often during the language-focused and content-focused interactions (79.9% and 65.4%), and CF occurred less frequently in the communicative and management-focused interactions (44.1% and 23.1%). A significant relation between the type of interactional context and the provision of CF was also indicated by the Chi-square test, $\chi^2(3, N=644)=93.311, p < .0001$.

Table 25 The provision of CF in each type of context in Ella’s class

	Content	Language	Communication	Management
CF	140 (65.4%)	203 (79.9%*)	49 (44.1%*)	15 (23.1%*)
No CF	74 (34.6%)	51 (20.1%*)	62 (55.9%*)	50 (76.9%*)
Total	214	249	35	65

$\chi^2(3, N=644)=93.311, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Visual presentations of the frequency of the provision of CF in each type of interactional contexts can be found in Figure 14. Across the four classes, the common pattern was that all four teachers corrected errors more often in the content and language context than they did in the communication and management content. Language contexts attracted the largest proportion of CF in every class. Except for Jessica, everyone provided the CF least frequently in management-oriented interactions.

Figure 14 The provision of CF in four contexts

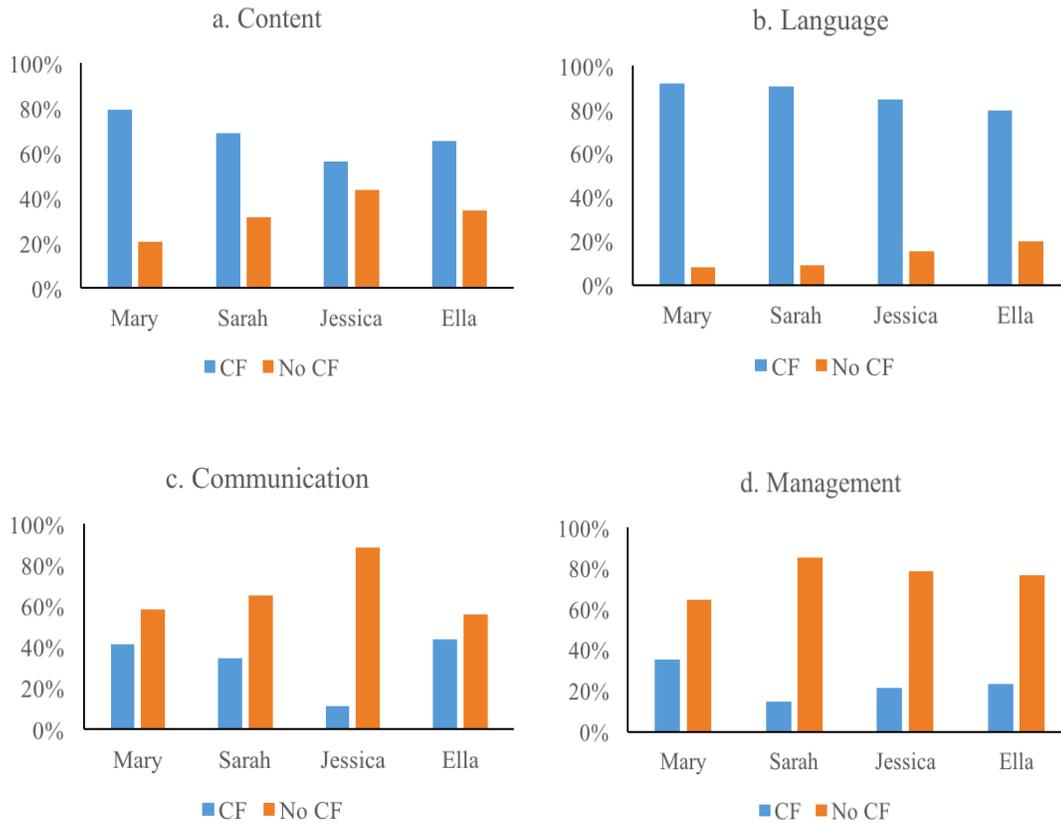


Table 26 demonstrates the distribution of each type of CF in the four contexts in Mary’s class. Overall, a variety of CF spread in all of the four interactional contexts. All eight types of CF occurred in the content and language contexts, and only repetitions were missing in the communicative and management contexts. Elicitations and recasts were dominant in the content and language contexts, with the total of the two types accounting for the majority of the overall CF provided in the two contexts (70.9% and 64.5%). Mary relied more on recasts in interactions where the focus was on language (43%) and communication (51.2%), while elicitations were preferred in interactions where the focus was on content (39.4%). During interactions where the teacher focused on classroom management issues, elaborations

(23.7%), elicitations (21.1%), and recasts (21.1%) were fairly evenly used. In addition, the clarification request was another type of CF Mary used relatively more frequently in management-focused interactions.

Table 26 Distribution of CF across four interactional contexts in Mary's class

	Content	Language	Communication	Management
Clarification request	5 (3%)	9 (6.6%)	9 (18.7%)	4 (10.5%)
Elicitation	65 (39.4%)	29 (21.5%)	2 (4.2%)	8 (21.1%)
Metalinguistic clue	2 (1.2%)	12 (8.9%)	1 (2.1%)	1 (2.6%)
Repetition	1 (0.6%)	2 (1.5%)	0 (0%)	0 (0%)
Elaboration	25 (15.2%)	15 (11.1%)	4 (8.3%)	9 (23.7%)
Explicit correction	15 (9.1%)	8 (5.9%)	5 (10.4%)	7 (18.4%)
Recast	52 (31.5%)	58 (43%)	25 (52.1%)	8 (21.1%)
Confirmation	0 (0%)	2 (1.5%)	2 (4.2%)	1 (2.6%)
Total	165	135	48	38

Sarah's choice of CF techniques in each interactional context is shown in Table 27. Similar to Mary, all the eight types of CF occurred in the interactions where content or language was a focus. However, the CF provided in the communicative interactions or interactions dealing with management issues was less diverse than that of Mary; neither repetition nor clarification request were provided in the two contexts, and explicit correction was missing in the communicative context. Sarah also preferred elicitations when the interactional focus was content (48.2%). Recasts were consistently used during interactions where a focus was on language (50.2%), communication (64.7%), or management (46.7%). What was different from Mary's class was that, in the Sarah's class, each context had a predominant type of CF rather than a spread of proportion among two to three types as in the case of Mary.

Table 27 Distribution of CF across interactional contexts in Sarah's class

	Content	Language	Communication	Management
Clarification request	5 (2.6%)	11 (4.9%)	0 (0%)	0 (0%)
Elicitation	94 (48.2%*)	28 (12.6%*)	2 (11.8%)	2 (13.3%)
Metalinguistic clue	2 (1%*)	18 (8.1%*)	1 (5.9%)	1 (6.7%)
Repetition	16 (8.2%)	12 (5.4%)	0 (0%)	0 (0%)
Elaboration	28 (14.4%)	15 (6.7%*)	2 (11.8%)	2 (13.3%)
Explicit correction	8 (4.1%)	16 (7.2%)	0 (0%)	2 (13.3%)
Recast	35 (17.9%)	112 (50.2%*)	11 (64.7%*)	7 (46.7%)
Confirmation	7 (3.6%)	11 (4.9%)	1 (5.9%)	1 (6.7%)
Total	195	223	17	15

Table 28 shows how Jessica reacted to students' errors in four interactional contexts. Similar to Mary and Sarah, Jessica had a preference for elicitations in the content-focused interactions, and the proportion reached as high as 72%. Recasts were used most frequently in interactions focusing the language (54%). During interactions in which communicative or management issues were dealt with, Jessica relied on both elicitations and recasts to handle students' errors: in communicative interactions, the two types were evenly spread (50%), and elicitations and recasts constituted 47% and 33.3% of the overall CF provided in management-focused interactions. The type of CF was limited, compared to that was provided in classes Mary and Sarah. Except for elicitations and recasts, the proportions of other CF types were pretty low in content and language contexts; whereas in the communicative and management contexts, there were further reduced types of CF—only two in the communication context and four types in the management context.

Table 28 Distribution CF across interactional contexts in Jessica's class

	Content	Language	Communication	Management
Clarification request	4 (3.2%)	16 (7.6%)	0 (0%)	1 (6.7%)
Elicitation	90 (72%)	45 (21.3%)	2 (50%)	7 (46.7%)
Metalinguistic clue	2 (1.6%)	20 (9.5%)	0 (0%)	0 (0%)
Repetition	2 (1.6%)	1 (0.5%)	0 (0%)	0 (0%)
Elaboration	6 (4.8%)	9 (4.2%)	0 (0%)	1 (6.7%)
Explicit correction	0 (0%)	5 (2.4%)	0 (0%)	0 (0%)
Recast	18 (14.4%)	114 (54%)	2 (50%)	5 (33.3%)
Confirmation	3 (2.4%)	1 (0.5%)	0 (0%)	1 (6.7%)
Total	125	211	4	15

Table 29 displays the distribution of the eight types of CF by interactional context in Ella's class. Similar to Mary's case, all eight types of CF were provided in the interactions where the focus was on content or language. While the communicative and management-focused interactions also triggered a variety of CF, each of the contexts lacked two types of CF (metalinguistic clue and repetition vs. elicitation and metalinguistic). Recasts were fairly consistently preferred in all the contexts (36.4% to 55.2%). Elicitations were the second choice in the contexts of content (27.9%) and language (17.7%), while elaborations occurred second most frequently in the communicative contexts.

Table 29 Distribution of CF across interactional contexts in Ella's class

	Content	Language	Communication	Management
Clarification request	5 (3.6%)	6 (3%)	3 (6.1%)	1 (6.7%)
Elicitation	39 (27.9%)	36 (17.7%)	8 (16.4%)	0 (0%)
Metalinguistic clue	5 (3.5%)	19 (9.3%)	0 (0%)	0 (0%)
Repetition	3 (2.1%)	6 (3%)	0 (0%)	1 (6.7%)
Elaboration	25 (17.9%)	10 (4.9%)	13 (26.5%)	2 (13.3%)
Explicit correction	7 (5%)	8 (3.9%)	1 (2%)	2 (13.3%)
Recast	51 (36.4%)	112 (55.2%)	23 (47%)	6 (40%)
Confirmation	5 (3.6%)	6 (3%)	1 (2%)	13 (20%)
Total	140	203	49	15

Table 30 Average distribution of CF across interactional contexts

	Content	Language	Communication	Management
Clarification request	3%	5.53%	6.2%	5.98%
Elicitation	47%	18.28%	20.6%	20.28%
Metalinguistic clue	2%	8.95%	2%	2.33%
Repetition	3%	2.6%	0%	2%
Elaboration	13%	6.73%	11.65%	14.25%
Explicit correction	5%	4.85%	3.1%	11.25%
Recast	25%	51%	53.45%	35.28%
Confirmation	2%	2.48%	3.03%	9%

Figure 15 Distribution of each type of CF in four contexts

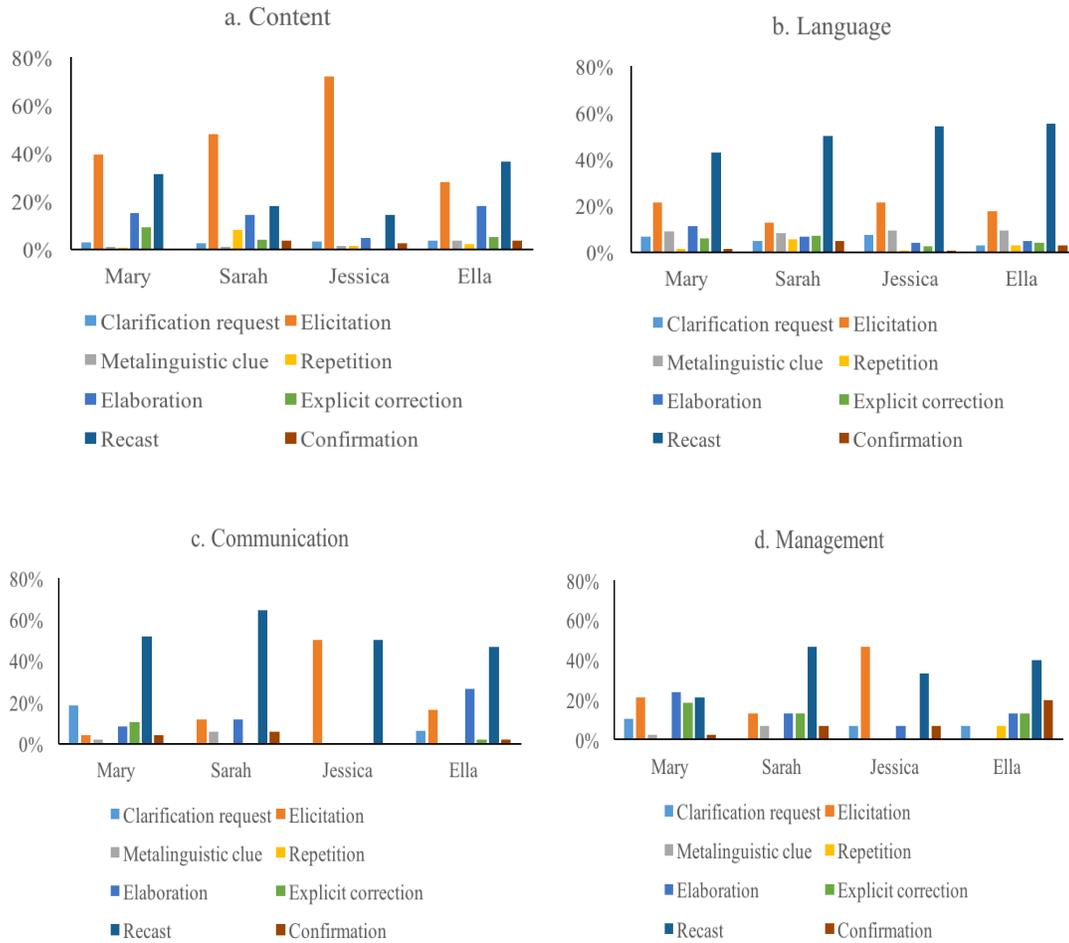


Table 30 presents the average frequency of each type of CF in four interactional contexts across four classes, and Figure 15 displays a visual presentation of CF distribution by the interactional context. In conclusion, not all eight types of CF occurred in every context; CF provided in the content and language contexts were

more diverse than that occurred in the interactions when students and teachers focused on communication and classroom management. Recasts were preferred in communication and language contexts (averaging 53.45% and 51%), and elicitations were more frequently used in the content-focused interactions (averaging 47%). The four teachers never used repetitions in the communicative interactions, and metalinguistic clues and explicit corrections were less used in this context as well (averaging 2% and 3.1%). Teachers preferred to use recasts (averaging 35.28%) and elicitations (averaging 20.28%) in the management-oriented interactions.

4.3.3 The Effect on the Learner Response

The Chi-square test results shows that the learner response was found to be significantly related to the interactional context in all four classes, $\chi^2(6, N=386)=13.1, p = .041$, $\chi^2(6, N=450)=24.877, p < .0001$, $\chi^2(6, N=355)=16.795, p = .01$, $\chi^2(6, N=407)=32.511, p < .001$. It indicates whether students respond to the CF or not or modify their errors or not is in accordance with the focus of the interaction. The details are presented below by class.

Table 31 Pattern of the learner response in four interactional contexts—Mary’s class

	Content	Language	Communication	Management
Modification	75 (52.1%)	15 (55.6%)	86 (31.3%*)	15 (39.5%)
No modification	35 (25.5%)	18 (25.9%)	42 (37.4%)	9 (23.7%)
No response	25 (22.4%)	15 (18.5%)	37 (31.3%)	14 (36.8%*)
Total	135	48	165	38

$\chi^2(6, N=386)=13.1, p = .041$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

As can be seen from Table 31, Mary’s students modified their errors most frequently in the language context (55.6%), followed by the content context (52.1%). Communicative context attracted a significantly lower proportion of modifications (31.3%), while management context had a significantly greater proportion of no

response (36.8%). Responses without modification were found to occur most frequently in communicative interactions (37.4%).

Table 32 Pattern of the learner response in four interactional contexts—Sarah’s class

	Content	Language	Communication	Management
Modification	108 (55.4%)	121 (54.3%)	6 (35.3%)	3 (20%*)
No modification	52 (26.7%)	60 (26.9%)	8 (47.1%)	2 (13.3%)
No response	35 (17.9%)	42 (18.8%)	3 (17.6%)	10 (66.7%*)
Total	195	223	17	15

$\chi^2(6, N=450)=24.877, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Table 32 demonstrates the number and percentage of learner response in each interactional context in Sarah’s class. Students in this class modified their errors more frequently during interactions where the focus was on content (55.4%), followed by language focused interactions (54.3%). A significantly lower proportion of modifications was found in the management context, which also triggered a significantly greater proportion of no response. Learner responses without modification occurred most frequently in communicative interactions as well (47.1%).

Table 33 Pattern of the learner response in four interactional contexts—Jessica’s class

	Content	Language	Communication	Management
Modification	83 (66.4%)	131 (62.1%)	2 (50%)	12 (80%)
No modification	31 (24.8%)	35 (16.6%)	2 (50%)	0 (0%)
No response	11 (8.8%*)	45 (21.3%*)	0 (0%)	3 (20%)
Total	125	211	4	15

$\chi^2(6, N=355)=16.795, p = .01$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

The number and percentage of learner response in the four contexts displayed in Table 33 indicate that Jessica’s students were more likely to modify their errors in every type of context, given the fact that modifications constituted a major proportion of learner response in each context (50% to 80%). Management-focused interactions had the largest proportion of modification (80%), and a significantly greater

proportion of no response was found in the language focused interactions.

Communicative interactions had the largest proportion of responses with no modifications (50%). The chance for students to respond to the CF with modification and without modification in communicative interactions was even (50% and 50%).

Table 34 Pattern of the learner response in four interactional contexts—Ella’s class

	Content	Language	Communication	Management
Modification	57 (40.7%)	112 (55.2%*)	9 (18.4%*)	2 (13.3%*)
No modification	44 (31.4%)	40 (19.7%*)	23 (46.9%*)	6 (40%)
No response	39 (27.9%)	51 (25.1%)	17 (34.7%)	7 (46.7%)
Total	140	203	49	15

$\chi^2(6, N=407)=32.511, p < .001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

According to the number and percentage of each type of learner response in different contexts demonstrated by Table 34, Ella’s students were more likely to modify their errors in the contexts of content and language, which was similar to those of Mary and Sarah. Language focused interactions attracted the largest proportion of modifications (55.2%), whereas the management-focused interactions attracted the lowest (13.3%), and the management context was also the context where students were mostly likely not to respond to the teacher’s CF (46.7%). Similarly, utterances without modifications were found to occur most frequently in the communicative interactions (46.9%).

Table 35 Average distribution of learner response across interactional contexts

	Content	Language	Communication	Management
Modification	53.7%	56.8%	33.8%	38.2%
No modification	27.1%	22.3%	45.4%	19.3%
No response	19.3%	20.9%	20.9%	42.6%

Figure 16 The distribution of learner response in four contexts

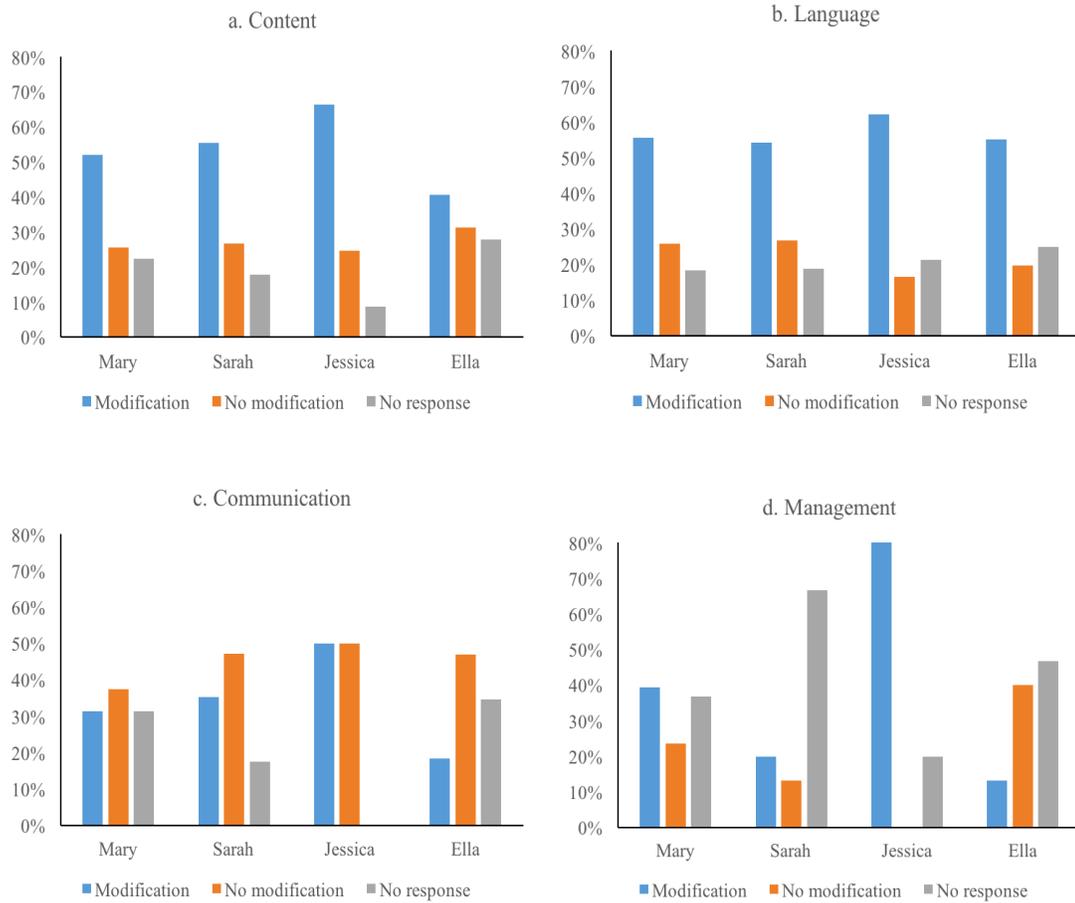


Table 35 demonstrates the average frequency of learner response, and Figure 16 visually presents how each type of learner response was proportionally distributed in the four contexts. In general, students were more likely to modify their initial non-target-like utterances following CF when the interactional context focused on content (averaging 53.7%) or language (averaging 56.8%). Students were most likely to respond to teachers' CF without modifications during communicative interactions (averaging 45.4%). Students tended not to respond to any CF when the interactional focus was on management (averaging 42.6%).

4.4 Learner Perception of the Feedback

This section presents results that describe how learners perceived the CF as provided by teachers through stimulated recall sessions, addressing the research question *(3) How do learners perceive oral corrective feedback in Chinese immersion classrooms? (a) Do learners accurately perceive the corrective feedback? (b) And is the accurate perception affected by the type of feedback and the type of recipient?*

4.4.1 Type of Learner Perception

The stimulated recall comments of students generally follow three categories: no comment, not noticing the CF, noticing the CF. No comment refers to cases where students claimed they did not remember the CF episode that was shown to them, or simply responded that they did not know what to say. Within the category of not noticing the CF, students' comments were divided into two subcategories: failing to recognize the corrective intention and irrelevant comments. In the instances where students failed to recognize the corrective intention, they noticed the feedback but accepted it as the teacher's confirmation, agreement, or explanation. Noticing the CF encompasses three subcategories: noticing the corrective intention not the error, noticing the error and the gap, and noticing the error but not the gap. In instances where students noticed the corrective intention not the error, they claimed they knew that the teacher was doing correction, but they were not clear about what was wrong. Noticing the error and the gap refers to cases where students noticed both what was wrong and what should be correct; noticing the error but not the gap refers to

instances in which students noticed what was wrong but were not sure of what would be correct. Examples are listed below:

(8) No comment

(Video prompts)

S: 这些 Jessica 老师很聪明。 [These Miss Jessicas are smart.]

T: 只有一个 Jessica 老师, 你要说很多个。 [There's only one Miss Jessica. You have to say several.]

S: 哦, 这些, 这些, 这些, 这些书很好读。 [Oh, these, these, these, these books are good for reading.]

T: 嗯, 非常好! [Ah, very good!]

(Students' recall)

S1: I don't remember.

(Teacher's recall)

T: 他们可能跟“这个”搞混了, 所以要提醒他们把这个弄清楚, 就特别强调了这些是很多个的意思。 [They might be confusing “these” with “this,” so I reminded them by emphasizing that the meaning of “these” denotes many.]

(9) Not noticing the CF

a. Failing to recognize the corrective intention

(Video prompts)

T: 回收, “回家”的“回”, “收”——[Recycle (back collect), “back” as in “going back home,” “collect”—]⁵

S: 我的收。 [My hand (the pronunciations of “hand” and “collect” in Chinese are similar)]

T: 这个不是, 这是“收东西”的“收”, 我收作业。 [No, “collect” here is as in “collect things.” I collect assignments.]

(Student' recall)

S1: Yes, I remember this. Some people playing a game and the teacher said “recycle” in Chinese and XX said “hand” in Chinese, and it's like the same in Chinese, so XX said OK, and he said right.

(Teacher's recall)

T: 这里他把“手”和“收”搞错了, 我就特别给他指出来, 是因为他这完全是理解上一个错误, 要他明白中文的同音字。 [He confused “hand” with “collect.” I explicitly pointed out, because it's a mistake regarding the meaning comprehension, and I also want him to know they are homophones in Chinese.]

⁵ “Recycle” in Chinese is “huí shōu” and its literal translation is “back collect”; the pronunciation of “shōu (collect)” is similar to “shǒu (hand),” so the student had confused with the two words.

b. Irrelevant comments

(Video prompts)

T: 下一个，我知道，这个，你第一次见到别人的时候你会做什么？[The next one, I know, this, so what would you do when you meet someone for the first time?]

S1: 哦，拍手！[Oh, clap hands!]

T: 不是拍手，是握手，握手的“握”。[Not “clap hands,” it’s “shake hands,” “shake” as in “shake hands.”]

S2: 握手。[Shake hands.]

(Student’ recall)

S: 她在想。[She is thinking.]

(Teacher’s recall)

T: 这很明显的错误，怎么会是拍手呢，这些都是熟悉的，他们学过，所以我直接纠正。[This mistake was obvious. How could it be “clap hands?” These were familiar words that they learned before, so I made a direct correction.]

(10) Noticing the CF

(Video prompts)

S: 这些很胖。[These are fat.]

T: 什么东西？[What things?]

S: 人。[People.]

T: 这些人很胖，对，这个句子很好。[These people are fat; right, this sentence is good.]

(Teacher’s recall)

T: 这个我一开始没明白，然后我大概知道他想说什么，但是是想鼓励他说，所以就先问一下来提示他。[I didn’t quite understand him at the beginning but I roughly knew what he meant; I wanted to encourage him to express by himself, so I raised a question to prompt him.]

a. Noticing the corrective intention not the error

(Student’ recall)

S: 我想她在问，老师觉得没有意义。[I think she was asking something, and the teacher thought not meaningful.]

b. Noticing the error and the gap

(Student’ recall)

S: 我觉得 XX 不对在老师问他的时候，但是下一秒，他说了什么是胖。[I think XX was not right when the teacher asked him, but the next second, he said what was fat.]

c. Noticing the error not the gap

(Student’ recall)

S: 我觉得 XX 不对，因为他说了这是胖，老师在帮他。[I think XX is not right, because he said this is fat, the teacher helped him.]

Table 36 and Table 37 demonstrate the properties of CF occurred in the interactional episodes that were selected for the two stimulated recall sessions. According to the four teachers' stimulated recall comments, they generally did not distinguish between detailed categorizations of the CF but followed the two broad categories: prompt and reformulation. Additionally, CF episodes focusing on management and communication were not included due to the low frequency of the two contexts. It was difficult to keep the amount of each category exactly the same: considering the memory capacity of students and teachers, the quality of video clips, and the reachability of the CF, the selection of CF episodes was limited to a short time span (recorded the day before) and certain interactional moments (whole-class and group interactions when the CF could reach a broader range of recipients). However, there was no significant difference regarding the distribution of type and interactional context of the CF across the four classes, $\chi^2(3, N=80) = .553, p = .907$, $\chi^2(3, N=80) = 5.934, p = .115$, which has provided a relatively equal condition to examine the learner perception in relation to the CF type and context.

Table 36 CF included in the stimulated recalls

	Mary's class	Sarah's class	Jessica's class	Ella's class
Prompt	11 (55%)	9 (45%)	10 (50%)	9 (45%)
Reformulation	9 (45%)	11 (55%)	10 (50%)	11 (55%)
Total	20	20	20	20

$$\chi^2(3, N=80) = .553, p = .907$$

Table 37 Interactional context of the CF included in the stimulated recalls

	Mary's class	Sarah's class	Jessica's class	Ella's class
Content	13 (65%)	8 (40%)	6 (30%)	7 (35%)
Language	7 (35%)	12 (60%)	14 (70%)	13 (65%)
Total	20	20	20	20

$$\chi^2(3, N=80) = 5.934, p = .115$$

In addition, how students reacted to the CF in the selected interactional episodes is shown in Table 38 and Table 39. It can be seen that 24 focus students in the four classes generally had a higher chance to modify their errors in content-focused interactions (70.6%), and prompts triggered increased modifications (73.7%).

Table 38 Learner response by interactional context

	Content	Language
Modification	24 (70.6%)	26 (56.5%)
No modification	7 (20.6%)	12 (26.1%)
No response	3 (8.8%)	8 (17.4%)
Total	34	46

Table 39 Learner response by CF categories

	Reformulations	Prompts
Modification	22 (52.4%)	28 (73.7%)
No modification	9 (21.4%)	10 (26.3%)
No response	11 (26.2%)	0 (0%)
Total	42	38

4.4.2 Noticing

Table 40 and Figure 17 illustrate the patterns concerning the learner perception of the CF in the four classes. As indicated in Chapter Three, learners could either notice the CF, not notice the CF, or have no memory of the CF. The results of the Chi-square test confirmed that there was a significant interaction between the learner perception and class, $\chi^2(6, N=480)=59.296, p < .0001$. The selected students of Sarah, Jessica and Ella noticed the error and gap most frequently (48.3%, 64.2% and 69.2%), whereas Mary's students did not notice the CF most of the time (44.2%). Meanwhile, students of Jessica and Ella in the partial immersion program were more likely to pay attention to teachers' oral CF than those in the total immersion program, with the proportion of noticing the CF being significantly greater (64.2% and 69.2%

vs. 30.8% and 48.3%). In addition, the proportion of no comment by the students in the total immersion program was significantly greater than that of the partial immersion program (25% and 21.7% vs. 5% and 2.5%).

Table 40 Learner perception of CF by class

	Mary's class	Sarah's class	Jessica's class	Ella's class
No comment	30 (25%*)	26 (21.7%*)	6 (5%*)	3 (2.5%*)
Not noticing the CF	53 (44.2%*)	36 (30%)	37 (30.8%)	34 (28.3%)
Noticing the CF	37 (30.8%*)	58 (48.3%)	77 (64.2%*)	83 (69.2%*)
Total	120	120	120	120

$\chi^2(6, N=480)=59.296, p < .0001$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 17 Learner perception in the four classes

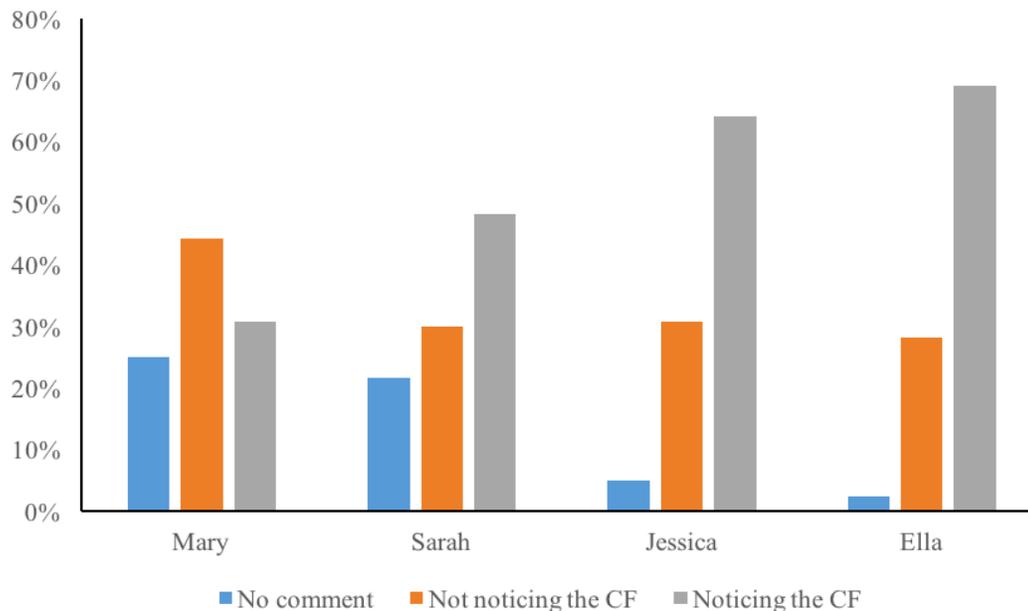
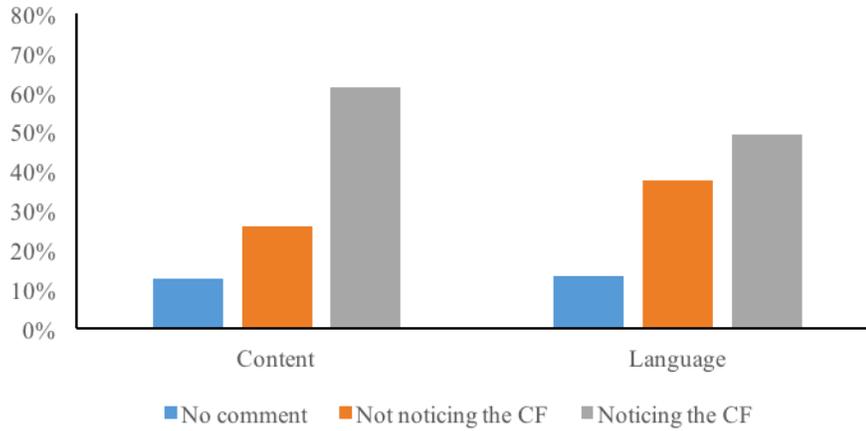


Table 41 and Figure 18 show the learner perception of CF in the two interactional contexts. It can be seen that more proportions of CF were noticed when the interactional context was content (averaging 61.38%) than when the context was about the language (49.27%). The possibility that students did not notice the CF was greater (37.53%) in language-focused interactions than in content-focused interactions.

Table 41 Learner perception of CF by interactional context

	Content	Language
No comment	12.63%	13.2%
Not noticing the CF	25.9%	37.53%
Noticing the CF	61.38%	49.27%

Figure 18 Perception of CF in two interactional contexts



The CF episodes selected for each stimulated recall interview included 7 types of CF, as listed in Table 42, which demonstrates the selected students' overall perception of each type of CF. In general, students were more likely to notice prompts (clarification request, elicitation, metalinguistic clue, repetition) than formulations (elaboration, explicit correction and recast). Elicitations were noticed most often (60.3%), followed by clarification requests (55.6%). However, differing from other types of reformulations, recasts triggered a relatively high rate of noticing (51.3%).

Table 42 Perception of different types of CF

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast
No comment	4 (22.2%)	17 (10.9%)	6 (16.7%)	4 (22.2%)	7 (28%)	12 (15.5%)	16 (10.7%)
Not noticing the CF	4 (22.2%)	45 (28.8%)	12 (33.3%)	6 (33.3%)	8 (32%)	27 (35.1%)	57 (38%)
Noticing the CF	10 (55.6%)	94 (60.3%)	18 (50%)	8 (44.4%)	10 (40%)	38 (49.4%)	77 (51.3%)

4.4.3 Perception Accuracy

Given the fact that the tokens of the learner perception in relation to the CF type and context in each class were low, I examined the relationship between the learner perception and the CF type in a combined manner. Table 42 and Figure 19 illustrate how students perceive the two broader categories of CF in content focused or language focused interactions. The Chi-square results indicated that the students performed differently in the two interactional contexts: there was a significant relationship between learner perception and the CF type when the interactions were content focused, $\chi^2(4, N=203)=15.161, p = .004$, although the significant relationship between the two was not evident when the interactions were language focused, $\chi^2(4, N=277)=3.871, p = .424$. Specifically, during the content focused interactions, students were more likely to have accurate perceptions for prompts than for reformulation (47% vs. 32.4%); while during the language-focused interactions, students had similar perceiving patterns for prompts and reformulations.

Table 43 Learner perception and type of CF across interactional contexts

	Content-focused		Language-focused	
	Prompt	Reformulation	Prompt	Reformulation
Noticing the corrective intention not the error	5 (3.8%)	2 (2.8%)	7 (7.4%)	24 (13.1%)
Noticing the error and the gap	62 (47%*)	23 (32.4%*)	33 (35.1%)	66 (36%)
Noticing the error not the gap	18 (13.6%*)	2 (2.8%*)	3 (3.2%)	10 (5.5%)
No comment	17 (12.9%)	15 (21.1%)	14 (14.9%)	19 (10.4%)
Not noticing the CF	30 (22.7%*)	29 (40.9%*)	37 (39.4%)	64 (35%)
Total	132	71	94	183

$\chi^2(4, N=203)=15.161, p = .004, \chi^2(4, N=277)=3.871, p = .424$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 19 Learner perception and type of CF

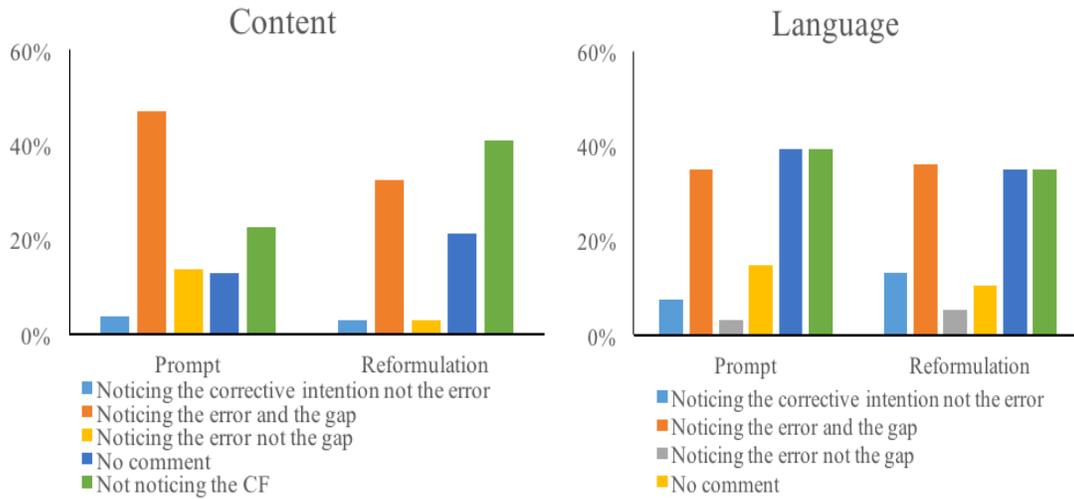


Table 43 and Figure 20 demonstrate how a direct or indirect recipient of CF perceived the CF in different interactional contexts. Chi-square test results showed that there was a significant interaction between the learner perception and the type of recipient regardless of the interactional context, $\chi^2(4, N=203)=11.056, p = .026$, $\chi^2(4, N=277)=13.759, p = .008$, suggesting that whether students were direct or indirect recipients of CF influenced how they perceived the CF. In both content-focused and language-focused contexts, direct recipients noticed the error and the gap most of the time (59.3% and 51.9%); meanwhile, direct recipients were more likely to have an accurate perception of the CF than were indirect recipients, based on the fact that the proportion of direct recipients noticing the error and the gap was significantly greater than that of indirect recipients (59.3% vs. 35.6% and 51.9% vs. 31.8%).

Table 44 Learner perception and type of recipient across interactional contexts

	Content-focused		Language-focused	
	Direct	Indirect	Direct	Indirect
Noticing the corrective intention not the error	0 (0%)	7 (4.7%)	6 (11.1%)	25 (11.2%)
Noticing the error and the gap	32 (59.3%*)	53 (35.6%*)	28 (51.9%*)	71 (31.8%*)
Noticing the error not the gap	5 (9.3%)	15 (10.1%)	5 (9.3%)	8 (3.6%)
No comment	7 (13%)	25 (16.8%)	4 (7.4%)	29 (13%)
Not noticing the CF	10 (18.5%*)	49 (32.9%*)	11 (20.4%*)	90 (40.4%*)
Total	54	149	54	223

$\chi^2(4, N=203)=11.056, p = .026, \chi^2(4, N=277)=13.759, p = .008$; cells marked with asterisks were those that contributed to a significant difference (adjusted standardized residuals greater than +2 or less than -2)

Figure 20 Learner perception and type of recipient

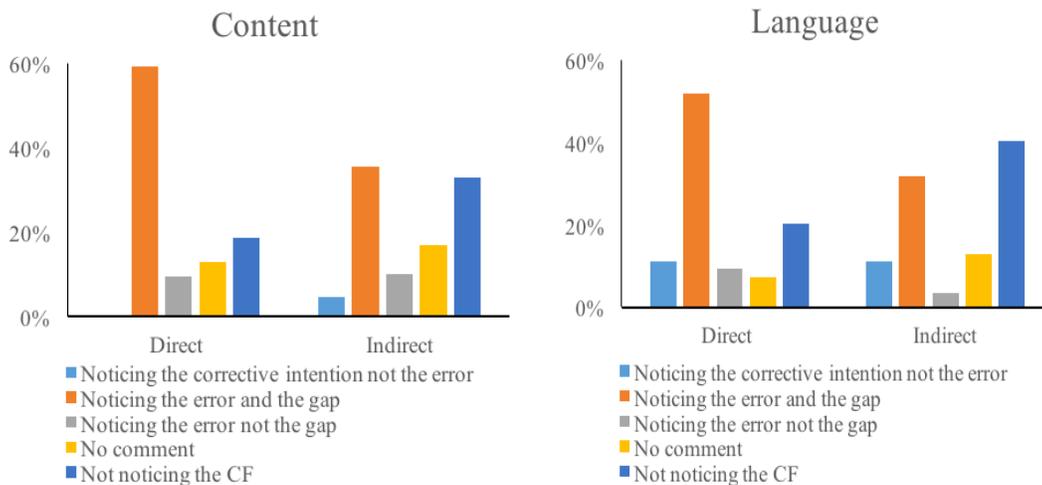


Table 44 shows the rate of accurate perception that different types of recipients had following the seven types of CF involved in the selected interactional episodes. Direct recipients of clarification requests had the highest rate of accurate perception (100%), and indirect recipients of elicitation were most likely to have accurate perceptions (41%). Overall, students had a higher rate of accurate perception of elicitation (44.9%), followed by repetition (44.4%).

Table 45 Perception accuracy of different types of CF

	Clarification request	Elicitation	Metalinguistic clue	Repetition	Elaboration	Explicit correction	Recast
Direct	100%	56.4%	33.3%	60%	55.6%	66.7%	51.4%
Indirect	25%	41%	33.3%	38.5%	18.8%	35.4%	27%
Total	33.3%	44.9%	33.3%	44.4%	32%	40.3%	32.7%

4.5 Conclusion

In this subsection, I synthesize the findings of this study by research questions, and a summary is presented in following table.

Table 46 Summary of findings

RQ (1a): What is the distribution of each type of corrective feedback in elementary Chinese immersion classrooms?
<i>Findings presented in Section 4.1</i>
<ul style="list-style-type: none"> • All the four teachers corrected the learner errors most of the time (the occurrence of the CF in each class went beyond 60%), and there is no significant difference regarding the frequency of CF among the four classes. • Two broad categories and eight types of CF were used: reformulation—explicit correction, recast, elaboration, and confirmation; prompt—elicitation, clarification request, metalinguistic clue, and repetition. • Frequency of different types of CF <ul style="list-style-type: none"> ○ Commonality across four classes <ul style="list-style-type: none"> ▪ The recast (averaging 40%) and elicitation (averaging 29%) were used as the top two frequent CF types ▪ Repetition, metalinguistic clue, clarification request, explicit correction and confirmation were rarely used (less than 10%) ▪ Elaboration was used relatively more often than the above five types of CF (averaging 10.23%). ○ Difference: the type of CF varied significantly across four classes; <ul style="list-style-type: none"> ▪ Significantly greater proportion of clarification requests provided by Mary (27%) ▪ Significantly greater proportion of elicitations provided by Jessica (40.6%) ▪ Significantly greater proportion of repetitions provided by Sarah (6.2%) ▪ Significantly greater proportion of elaborations provided by Mary (13.7%) ▪ Significantly greater proportion of explicit corrections provided by Mary (9.1%) ▪ Significantly greater proportion of recasts provided by Ella (47%) ▪ Significantly greater proportion of confirmations provided by Sarah (4.4%) ▪ No significant difference of the proportion of metalinguistic clues.

Findings presented in Section 4.2

- Patterns of learner response: modification, no modification and no response.
- Frequency of each pattern of learner response
 - Commonality across four classes: students of all the four classes responded to the CF by modifying their initial errors most often—near or beyond half of the occurred learner response contained modification
 - Difference: the difference between the proportion of response by class was significant:
 - CF provided by Jessica led to a significantly greater proportion of modification (64.2%)
 - CF provided by Jessica led to a significantly less proportion of no modification (19.2%)
 - CF provided by Ella led to a significantly greater proportion of no response (28%).
- Learner response and the type of CF: significant relationship between the pattern of learner response and the type of CF, suggesting learner response varied following different types of CF.
 - Patterns across four classes:
 - Prompts were more likely to lead students to modify their initial errors
 - Overall, metalinguistic clues and elicitations triggered more learner responses with modifications (80.58% and 79.5%), followed by repetitions and clarification requests (57% and 51.48%)
 - Explicit corrections and recasts were the two types of reformulations triggered relatively more responses with modifications (41.63% and 41.6%), whereas elaborations and confirmations rarely led to responses with modifications (19.15% and 16%)
 - Difference:
 - Mary's class: the following types of CF were more likely to lead students to modify their initial errors: elicitation (78.8%) > metalinguistic clue (62.5%) > clarification request (55.6%) > explicit correction (54.3%) > recast (35.7%); students did not modify errors at all following repetitions (0%)
 - Sarah's class: the following types of CF were more likely to lead students to modify their initial errors: metalinguistic clue (86.4%) > elicitation (76.2%) > repetition (67.9%) > explicit correction (50%) > recast (43.6%); confirmations triggered significantly greater proportion of no modification (70%)
 - Jessica's class: the following types of CF were more likely to lead students to modify their initial errors: repetition (100%) > metalinguistic clue (81.8%) > elicitation (79.9%) > clarification request (52.4%) > recast (43.6%); confirmations led to the significantly greatest proportion of responses with no modifications (80%)
 - Ella's class: the following types of CF were more likely to lead students to modify their initial errors: metalinguistic clue (91.6%) > elicitation (83.1%) > clarification request (66.7%) > repetition (60%); confirmations did not lead to any modification (0%).

<p><i>Findings presented in Section 4.2</i></p>
<ul style="list-style-type: none"> • Closer look of learner response patterns: <ul style="list-style-type: none"> ○ Modification <ul style="list-style-type: none"> ▪ Two patterns: successful modification of the initial error and unsuccessful modification of the initial error ▪ Students tended to have more successful modifications than unsuccessful modifications. ○ No modification <ul style="list-style-type: none"> ▪ Four patterns: keep the same error, not attend to the focus of the CF, show acknowledgement with the CF, query about the CF ▪ Greater proportion of responses keeping the same error following clarification requests ▪ Greater proportion of responses showing acknowledgement following confirmations ▪ Relatively frequent occurrence of query about elicitations ▪ More proportions of response showing acknowledgement following recasts and response not attending to the recast.
<p>QR (2a): Is there a relationship between the interactional context and (a) the occurrence of teachers' oral corrective feedback?</p>
<p><i>Findings presented in Section 4.3.1 and 4.3.2</i></p>
<ul style="list-style-type: none"> • Occurrences of the four interactional contexts <ul style="list-style-type: none"> ○ Commonality: content and language contexts were dominant ○ Difference: the two total immersion classes (Mary and Sarah) had the largest proportion of content contexts (36% and 41.7%), while the language context occurred most frequently in the two partial immersion classes (43.2% and 39.5%). • Interactional context and the provision of CF: significant relationship between the interactional context and the provision of CF <ul style="list-style-type: none"> ○ Commonality <ul style="list-style-type: none"> ▪ Teachers corrected errors more often during the content-focused and language-focused contexts than they did in the communicative and management-focused contexts ▪ Language-focused contexts attracted the largest proportion of CF. ○ Difference: Mary, Sarah and Ella provided CF least frequently during the management-focused context, while Jessica did so in the communicative context.
<ul style="list-style-type: none"> • Interactional context and the type of CF: significant relationship between the two
<ul style="list-style-type: none"> ○ Commonality <ul style="list-style-type: none"> ▪ Not all eight types of CF occurred in every interactional context ▪ CF provided in the content and language contexts were more diverse than those that occurred in the interactions when students and teachers focused on communication and classroom management ▪ Teachers preferred recasts in communicative (averaging 53.45%) and language contexts (averaging 51%) ▪ Teachers preferred to use recasts (averaging 35.28%) and elicitations (averaging 20.18%) in management contexts ▪ Teachers had a preference over elicitations in content contexts (averaging 47%).

<i>Findings presented in Section 4.3.1 and 4.3.2</i>
<ul style="list-style-type: none"> ▪ Repetitions were never used, and explicit corrections (averaging 3.1%) as well as metalinguistic clues (averaging 2%) were less used in the communicative interactions.
<ul style="list-style-type: none"> ○ Difference: <ul style="list-style-type: none"> ▪ In communicative interactions: Jessica used the same proportions of elicitations and recasts (50% vs. 50%), whereas the other three used recasts more often than elicitations or used the two types evenly ▪ In interactions where the focus was on the management issues: significantly more proportions of elicitations were used by Jessica (46.7%) than other three.
RQ (2b): Is there a relationship between the interactional context and the learner response to oral corrective feedback?
<i>Findings presented in Section 4.3.3</i>
<ul style="list-style-type: none"> • Interactional context and the pattern of learner response: significant relationship between the two <ul style="list-style-type: none"> ○ Commonality <ul style="list-style-type: none"> ▪ Students were most likely to modify the initial utterances when the CF was provided in interactions focusing on content (averaging 53.7%) or language (averaging 56.8%) ▪ Students were most likely to respond to teachers' CF without modifications during communicative interactions (averaging 45.4%) ▪ Students tended not to respond to CF when the interactional context was about the management (averaging 42.6%). ○ Difference: <ul style="list-style-type: none"> ▪ During communicative interactions: the chance for students to respond to the CF with modification and without modification even (50% and 50%), while students in the other three classes tended not to modify their errors after they received CF ▪ During management-oriented interactions: Jessica's students were more likely to modify their initial errors than students in other three classes (80%), whereas the students in other three classes tended not to respond the CF.
RQ (3): How do learners perceive oral corrective feedback in Chinese immersion classrooms? (a) Do learners accurately perceive the corrective feedback? (b) And is the accurate perception affected by the type of feedback and the type of recipient?
<i>Findings presented in Section 4.4</i>
<ul style="list-style-type: none"> • Type of learner perception <ul style="list-style-type: none"> ○ Noticing the CF: noticing the corrective intention not the error, noticing the error and the gap (accurate perception), noticing the error not the gap ○ Not noticing the CF: failing to recognize the corrective intention, irrelevant comments ○ No comment • Learner perception across four classes <ul style="list-style-type: none"> ○ Focus students noticed greater proportions of CF in content-focused interactions (61.38%) than language-focused interactions (49.27%) ○ Students noticed elicitations most often (60.3%).

Findings presented in Section 4.4

- Difference: focus students from the partial immersion program (in classes of Jessica and Ella) were more likely to notice the teachers' oral CF than those from the total immersion program (in classes of Mary and Sarah), with the proportion of noticing CF being significantly greater (64.2% and 69.2% vs. 30.8% and 48.3%).
- Perception accuracy and type of CF: students performed differently in language and content contexts
 - During content contexts: a significant relationship between the learner perception and the CF type; students were more likely to have accurate perceptions for prompts rather than reformulation (47% vs. 32.4%)
 - During the language contexts: students had similar perceiving patterns for prompts and reformulations: the chance for students to have accurate perception of prompts and reformulations are close (35.1% and 36%).
- Perception accuracy and type of recipient:
 - There was a significant interaction between the learner perception and the type of recipient regardless of the interactional context
 - Direct recipients were more likely to have the accurate perception of the CF than indirect recipients regardless of the context (59.3% vs. 35.6% and 51.9% vs. 31.8%)
 - Direct recipients of clarification requests had the highest perception accuracy (100%), and indirect recipients of elicitations had the highest perception accuracy (41%); overall elicitations triggered the highest perception accuracy.

Chapter 5: Findings—Participants’ Perspectives and Connections to Previous Studies

In this chapter, findings from Chapter Four are discussed in relation to the previous studies and participants’ perspectives. In addition, the four main points are discussed from a theoretical lens based on the interaction approach to SLA: function of CF, learner response, interactional context and learner perception. The comprehensive discussion is intended to enrich the presentation of the data and gain a more nuanced understanding of the CF than the existing literature.

5.1 Providing Corrective Feedback

The results concerning the provision of CF in each immersion class showed the occurrence of CF went beyond 60% (61.6%-66.8%) in each of the four classes, suggesting that the four teachers reacted to students’ non-target-like utterances through CF for most of the time. This finding is consistent with the focus studies I reviewed: Lyster and Ranta (1997) found that 62% of student turns with errors received feedback in elementary French immersion classrooms in Canada; Lyster and Mori (2006) found that 61% of students’ non-target-like utterances were provided CF in elementary Japanese immersion classrooms in US; and Tsang (2004) found teachers responded to 77% of the errors in high school classrooms with English as a foreign language in Hong Kong. The finding also lends support to other classroom observational studies that found CF occurred frequently, such as high school classrooms with German as a foreign language in Belgium (Lochtman, 2002) and high school ESL classrooms in Canada (Simard & Jean, 2011).

The fact that Chinese immersion teachers were able to provide CF on a frequent basis in the content-based communicative teaching setting also supports Lyster's (2007) challenge of the paradox concerning the error treatment which is summarized in Chaudron (1988). The paradox states that teachers must either interrupt the communication for the formal correction or ignore the errors to keep the communicative flow. Lyster (2007) argues that teachers "do not have to choose between communication on the one hand and corrective feedback on the other" (p. 93), since teachers can provide oral CF frequently and still keep the interactional coherence, as proved by this study. In addition, the four Chinese immersion teachers all considered the CF as a strategy that can be effectively integrated into the communicative instruction based on the academic content. For example, one of them stated in the interview that:

"I think in immersion we rarely separate language instruction with content instruction. We don't treat the language as they do in a foreign language setting where they teach grammar, culture, and stuff in different lessons, but that doesn't mean we don't have formal instruction of the language. We design the instruction of the subject matter in a way that we can structure the teaching on the language or insert language instruction whenever the teaching moment comes out, like, I would be aware of the mistakes in their oral language and provide correction accordingly... but I think we should also be cautious that don't give too much (CF) to distract them." (Sarah, Interview 2)

However, teachers' concerns about CF did point to the possible adverse effect on the communicativeness if CF were provided excessively, which suggests they have a relative comprehensive view about the effectiveness of CF and are aware of monitoring their practice of CF. Thus, this concern did not lead them to withhold providing CF to a great extent in their teaching practice.

Furthermore, that the frequency of the CF was consistent across the grade levels indicates that for children, the provision of CF might not be influenced by their age. This finding supports the results of Oliver et al. (2008), which showed that the CF provided to the younger child learners and older child learners did not differ significantly. The teachers' similar belief about the applicability of the CF strategy to students of different ages might explain the high frequency of the CF across the grade levels:

“I taught lower grade level before, kindergarten kids, so I’m quite familiar with both groups of students (kindergarteners and third graders). I think both of them need my attention on their language production, and receive appropriate CF.” (Mary, Interview 2)

“I think I don’t really change the way I provide CF when I teach different grade levels, because I think kids of any age need correct models when they are still learning the language.” (Jessica, Interview 2)

5.2 Corrective Feedback: Diversity in Form and Response

Based on the findings about the occurrence of different types of CF and the learner response guided by each CF strategy, this section discusses how the oral CF provided by the four Chinese immersion teachers brought different learning opportunities to their students.

5.2.1 The Role of Corrective Feedback and Learner Response in L2 Learning

According to Mackey and Gass (2005), “the categories should always be as narrow as possible” to a classification scheme (p. 230). In other words, the classification should be as exhaustive as possible to include every possible pattern. Compared to the classification of oral CF that was commonly used by previous studies—that is, the six-type scheme proposed by Lyster and Ranta (1997)—the

eight-type scheme developed from the dataset of my study is more inclusive. The two new types added are elaboration and confirmation. The results regarding the distribution of the CF showed that all eight types of the CF occurred in the four immersion classes, despite of difference in the program model and grade level. This suggests that Chinese immersion teachers relied on a variety of CF strategies to treat students' non-target-like utterances, which is consistent throughout grade levels and instructional settings.

The findings showed that the distribution of CF type varied significantly across different classes: either in total immersion classrooms or in partial immersion classrooms, teachers differed from each other in the extent to which they used each CF type, which indicated that each teacher had an individual preference for the CF strategy. Mary used elaborations and explicit corrections respectively more often than the other three. Sarah used repetitions more frequently, and Jessica used elicitations a lot more. Overall, they greatly relied on recasts to treat the errors, followed by elicitations, and the occurrence of other types of CF was moderate, indicating that the different CF types varied in frequency but not in type across the four classes. The pervasiveness of the recasts further illustrates that it is the implicit type of CF that the Chinese immersion teachers preferred when they tried to direct learners' attention to their errors in meaning-focused classrooms. In general, the four Chinese immersion teachers used oral CF as a reactive teaching approach to enhance students' learning: teachers seized unplanned opportunities initiated by students' non-target-like utterances and reacted to the non-target-likeness with CF. Students' non-target-like utterances included both utterances with mistakes in content knowledge and

utterances that were not grammatical in the target language or conflated with first language. This study has not addressed the question about the proportion of non-target-like output and what types of errors teachers tended to correct; however, the finding that all four teachers used CF on a frequent basis and the learner response to CF varied following different types of CF did imply that teachers could adjust CF strategies to create different learning opportunities for students.

The various types of CF provided by Chinese immersion teachers served as different forms of linguistic input to learners and also triggered different patterns of learner response immediately following the CF. Three broad types of learner response were identified in the current study, which are response with modification, response with no modification, or no response. Lyster and Ranta (1997) used the term learner uptake to describe learners' immediate response to the CF, including both instances of students revising their initial errors and instances of students responding but not revising errors, whereas Mackey et al. (2000) used the term uptake to refer to "students' modification of their original utterance following the NS's provision of feedback" (p. 492). My study tried to avoid describing any pattern of learner response to CF as uptake, given the controversy of the term's definition. Instead, I considered learner response as an interactional move that may be facilitative in learning.

As output is widely considered to be essential for L2 learning (e.g. Long, 1996; Swain, 1985, 1995), both learner response with modification and without modification are important in investigating L2 learning following CF. The results of this study have showed that the proportion of learner output after CF reached over 75% (ranging from 76.4% to 83.4% in four cases), suggesting that CF tended to

trigger interactional moves between teachers and students in elementary Chinese immersion classrooms. Studying CF provided in a similar instructional setting, French immersion, Lyster and Ranta (1997) found just over half of CF (55%) led to output (termed as “learner uptake”), which is less than what was found in this study. Output only appeared following 48% of CF in Tsang (2004), which studied English immersion programs. Students from the Japanese immersion program in Lyster and Mori (2006), however, achieved a similar level of frequency—the percentage of output was 76%. Since studies of CF in the East Asian language immersion setting have been scarce, it would be hasty to jump into the conclusion that students in East Asian language immersion were more likely to respond to the CF. Many factors could contribute to this disparity between different language programs, such as curriculum focus, pedagogical preference, and characteristics of student group. For example, it was possible that students in Chinese and Japanese programs, compared to those in French and English programs, were more adept or quicker at negotiating meaning or linguistic form following the teachers’ reactive instruction, thereby resulting in more immediate interactional moves.

Much interaction research has studied the role of modified output in SLA, which is defined as reformulations of original utterance in response to feedback, and has found modified output produced following feedback benefited L2 development (Swain, 1985, 1995, 2005; Ellis & He, 1999; Izumi, 2003; McDonough, 2005). Because modified output encourages learners to reflect on their original utterances and pushes them to adjust the utterances to be more target-like (Gass & Mackey, 2006). In addition, it promotes automaticity of language if the CF particularly targets

the linguistic form. Thus, both successful modification and unsuccessful modification of the original utterance may be beneficial in L2 development, since both cases demonstrate students' possible recognition of non-target-likeness of the original utterances and their attempts to get close to the target utterance. This study also found instances when students did not modify their original utterances but did respond to CF to some extent. Among the four patterns identified regarding the learner response containing no modification, query about the CF suggests students might have high-order thinking of the CF, and acknowledgement with the CF indicates that students might accept or agree with CF, either of which could be evidence of students' recognizing the CF and might lead to productive use of utterances targeted by the CF later. McDonough and Mackey (2006) termed such delayed production "primed production," and found the primed production occurred interactional turns after the related CF exchange to be predictive of L2 development. Although the link between learner responses querying about or acknowledging with the CF and primed production was not statistically established in this study, I did find examples from my dataset showing the connection, as illustrated in (11) and (12).

(11) Primed production after query about the CF

S: 哦, 小猴子。 [Oh, a little monkey.]
T: 是小狮子。 [It's a little lion]
S: 什么是狮子? [What is a lion?]
T: 是。。。 (表演狮子) [It's...(the teacher acted out).]
S: Oh, lion.
T: (点头) [(The teacher nodded).]
S: 小狮子。 [Little lion.]

(12) Primed production after acknowledgement with the CF

T: 这是什么? [What's this?]

S1: 上长。 [Up and grow]
T: 是成长吗? [Is it “grow”?]
S1: 是。 [Yes.]

....
T: 这是什么? [What’s this?]
S1: 开花。 [Bloom.]
T: 开花? [Bloom?]
S2: 结果。 [Bear fruit.]
T: 很好。 [Good.]
S1: 成长然后结果。 [It grows and then bears fruit.]

As to responses not attending to the focus of CF, it might be the case that teachers’ reactions to students’ non-target-like utterances contain both CF and additional information that could distract their attention from what the CF targeted. However, there also was evidence from my dataset that showed primed production occurred several turns after the immediate response, as shown in example (13):

(13) Primed production after an immediate response that is off-target

T: “故乡”，给我一个句子。 [“Hometown,” give me a sentence.]
S1: 我是故乡。 [I’m hometown.]
T: 你的故乡在, 哪里。 [Your hometown **is in**, where.]
S1: 在 DC。 [In DC.]
S2: Virginia.
S3: Texas.
S4: 我的故乡也在 DC。 [My hometown is DC, too.]
T: 很好! [Good!]
S1: 我的, 我的故乡在 DC。 [My, my hometown is DC.]

In conclusion, Chinese teachers used oral CF as reactive instructional approach to treat students’ non-target-like utterances, and there were multiple strategies they used to deal with the non-target-likeness. Further, the teachers had similar choice over the CF type, but different extents to which they used each type of CF. The detailed examination of instances concerning learner response to CF in my study shows that it is possible that learners still recognize CF when the modified

output is not produced, which supports Mackey's (2012) claim that absence of modified output cannot be equated as a sign of the inefficacy of CF.

5.2.2 Multiple Functions of Corrective Feedback and Different Learning Opportunities

Elaboration and confirmation

As one of the two new types of CF that emerged from my dataset, elaboration was relatively commonly used in the four Chinese immersion classes included in my study. Among the eight types of CF, it was the third most frequently used type of CF in the cases of Mary, Sarah, and Ella, and it ranked fifth in frequency in Jessica's case. The teachers used elaborations either to explicitly point out the mistake and then added explanations about the gap between the non-target-like utterance and the correct model, or to provide additional information to enrich the students' language with the correct model being implicitly embedded. In immersion classrooms, as the goal is to enable students to comprehend content presented in the second language, it is important for teachers to adjust their speech by using "multiple examples, definitions, and synonyms to give students many chances to understand the target language" (Lyster, 2007, p.60). Through elaborations, immersion teachers make implicit or explicit correction and add definitions, examples or synonyms, in order to help students to become aware of the input and notice the gap and thus enhance their comprehension.

Students in the two total immersion classes were more likely to respond to the elaboration without modifying their initial non-target-like utterances, and students in the two partial immersion classes tended not to produce modified utterance or they

ignored the CF. That elaborations do not usually lead students to immediately modify their initial non-target-likeness suggests that elaborations are less likely to draw students' attention. This assumption was further confirmed by results that showed students' perception of elaborations was merely 40%. A detailed classification of students' immediate responses indicated that among responses without modification, those not attending to the focus of the CF accounted for a greatest proportion (14%-30.2%). Therefore, while the elaboration can provide enhanced comprehensible input, the elaborated information might also obscure the target of the CF. However, an elaboration that explicitly points out the mistake could be a better choice if the teacher's goal is to raise students' immediate attention to their errors and ensure their accurate understanding of the gap.

The occurrence of the confirmation was low in that it ranked the second-to-last in frequency among the four classes (averaging 2.7%). Confirmations were applied in a way that teachers indicated students' utterances were not clearly understood and at the same time provided one or two speculated correct form(s) in confirmation-seeking questions. Thus confirmations contain both positive and negative evidences as linguistic input. When students are observed to lack accuracy in expressing their ideas or communicating their needs through Chinese, teachers can talk with students about their utterances and help them become aware of their original production by providing the negative evidence through the confirmation, since negative evidence has been considered to enhance learners' noticing of non-target-like output.

Students tended to respond to the confirmation without modifying their initial non-target-like utterances (proportions of the response without modification range from 60% to 80% in the four classes), suggesting students tended not to notice the corrective intention of the confirmation. Although there was less immediate modified output following confirmations, students were most likely to respond to teachers' confirmation-seeking questions by showing their acknowledgement among those cases without modified output. As showing acknowledgement may indicate learners are processing the feedback, this finding implies that confirmations can possibly be facilitative in enhancing students' awareness of their non-target-like utterances.

Recast

Similar to results of previous studies examining recasts in different instructional settings (Ellis, Basturkmen & Loewen, 2001; Lee, 2007; Lyster & Mori, 2006; Lyster & Ranta, 1997; Panova & Lyster, 2002; Sheen, 2004), the results of this study have added further evidence that teachers used recasts most frequently (averaging 40%), compared to other types of CF. In other words, they greatly relied on recasts to treat students' non-target-like utterances. As to the learner response to the recast, students of Sarah and Jessica performed similarly: they were more likely to modify their non-target-like utterances than have no modification or no response, whereas students of Mary and Ella did not respond to recasts as often. Recasts vary in features, and some recasts may be more salient than others, which could explain the variation in the response pattern by students of different teachers. For example, how teachers make prosodic adjustment has an effect on the learner response to recasts. In particular, students are more likely to have productive use of recasts when they are

stressed. Philp (2003) found evidence of language development through test scores when recasts were presented with stress. In this study, Jessica whose students produced the greatest proportion of successful modifications (53.2%) after recasts emphasized in her interview that *“I try to make my feedback targeting an error salient by stressing the correct word or sentence, if I don’t want to explicitly say you wrong here, and most of time my students get my point”*.

Instructional setting could be another factor influencing learners’ response to recasts. In similar studies investigating children at similar grade levels in immersion classrooms, Lyster and Ranta (1997) along with Lyster and Mori (2006) showed the rate of the learner repair of their non-target-like utterances differed by the instructional setting: modified output (coded as repair) followed less than 20% of recasts in the French immersion setting, whereas the rate reached 50% in the Japanese immersion setting, because the more form-focused communicative orientations in the Japanese immersion setting primed learners to attend to the language form and incorporate the recast. While my study did include two instructional settings that differed in the form of immersion, total immersion and partial immersion, the two settings did not differ in the rate of modified output. The difference concerning the modified output occurred not out of the immersion format, but it might be related to the class size. Based on my observations, the size of Sarah’s and Jessica’s classes was smaller than those of Mary and Ella, and teachers had more individual interactions with students, thus resulting in more modified output; this is because CF was found to be more effective in individual interactions than in whole-class interactions (Anderson, Wilkinson & Mason, 1991; Wilkinson & Fung, 2002).

Although recasts generally triggered less modified output (averaging 41.6%), they led to other forms of reactions that possibly facilitated students' learning. In cases when there were some learner reactions to recasts but no modified output, students were likely to react by showing their acknowledgement (averaging 9.63%), which was consistent across all the four classes. Both modified output and responses show that acknowledgment following recasts is possible evidence of students noticing the recast. When the production of modified output and unmodified output containing acknowledgements are examined together, it can be assumed that recasts could facilitate students' learning by directing their awareness to the target model, to a large extent, regardless of their grade level and instructional setting. This assumption was also supported by students' rates of noticing recasts (51.3%) (the learner perception will be discussed in detail in Section 5.4).

Overall, the results of students' immediate reactions to recasts in Chinese immersion settings shed some light on the ongoing debates on the effectiveness of recasts (c.f. meta-analyses such as Li, 2010; Lyster & Saito, 2010; Long, 1996, 2007). My study leans towards the line of research that is represented by Long (1996), who argues that recasts are potentially effective in helping students to learn, because, as this study suggests, the recast did bring with it opportunities for students to notice its occurrence when it was embedded in meaningful conversational moves. Recasts may be ambiguous and thus trigger less modified output, as suggested by Lyster and colleagues, since learners may perceive them as non-corrective communicative continuation. However, that might only be the case during interactions where the focus is on communication and management, because the rates of modified output

following recasts in these two interactional contexts were less than 25% in my study. Modified output followed approximately half of recasts during language-focused interactions. Therefore, the context in which the recast occurs affects how learners respond to it. Details about the contextual factor are discussed in Section 5.3.

Explicit correction

Different from recasts, explicit corrections are salient and the corrective intention is less ambiguous. Explicit corrections were not frequently used by the four teachers in my study (less than 10% in four cases), which is similar to what previous studies have found (e.g. Lyster & Ranta, 1997; Lyster & Mori, 2006; Tsang, 2004). Mary and Sarah in the total immersion program used the explicit correction relatively more often than Jessica and Ella did in the partial immersion program. This might be related to teachers' perspectives on the explicit correction: the four teachers had a shared attitude, that they tried to explicitly avoid pointing out a mistake from students, since they believed explicit corrections could discourage students from using Chinese spontaneously in class; however, the two total immersion teachers were more positive about the role of explicit corrections. As Mary and Sarah stated:

“I think I try not to directly tell them that ‘you are wrong’; some students, particularly those shy kids might be less active in using Chinese to speak out. But sometimes it’s important to clearly point out their mistakes, otherwise they may not get it.” (Mary, Stimulated Recall 1)

“Explicit corrections are fine, and sometimes are necessary, and explicitness does help students get what they should know and what goes wrong, but using it on a regular basis may not be good to students’ learning motivations. You need to be careful, but not to avoid it.” (Sarah, Stimulated Recall 1)

Students from the two immersion programs responded to explicit corrections differently. They were more likely to modify their initial non-target-like utterances—

half or more than half of explicit corrections that occurred in the two classrooms were followed by modified output—which is consistent with students’ reactions to explicit corrections in Japanese immersion classrooms reported by Lyster and Mori (2006). On the other hand, less than 40% of explicit corrections led to modified output in the two partial immersion classrooms, which is similar to students’ responses to explicit corrections in the French immersion classrooms included in Lyster and Mori (2006). These results suggest that the explicit correction overtly served a corrective function in the total immersion setting and students were more able to immediately incorporate the correct model contained in teachers’ explicit corrections; whereas in the partial immersion setting, students were less adept at incorporating the correct model immediately.

Explicit corrections are generally considered to lessen learner building of hypotheses about language functioning (Day, Chenoweth, Chun, & Luppescu, 1984), and thus reduce the opportunities for learners to seek the un-target-likeness and produce self-generated repairs. Instead, they create opportunities for repairing, repeating, or incorporating the correct model presented by teachers. Based on my observations, students in the two total immersion classrooms did show that they were more adept at producing modified output following explicit corrections, because the two teachers tended to invite students to practice the correct model following explicit corrections. The invitation was not only sent to the same student who initiated the CF interaction, but also to other students who were indirectly involved in the interaction. Relevant examples are presented in (14a) and (14b).

(14) Explicit corrections with teacher invitation to practice the correct model

a). S: 是。 [Yes]

T: 不是说“是”，请说“我知道”。 [Not “yes”; please say “I know”.]

S: 我知道。 [I know.]

b). S1: 我们爱，我们爱不了。。。 [We love, we love not....]

T: 这个字不是“爱”，是“受”，看起来很像“爱”，但是“受不了”。告诉我这个是什么字？ [This word is not “love,” it’s “endure.” It looks similar to “love,” but it’s “can’t endure.” Tell me what this word is.]

S2: “受”。 [“Endure.”]

Elicitation

Through elicitation, teachers directly elicited correct linguistic forms or content knowledge from students in immersion classrooms by sending hints that required students to generate reformulations, or allowed students to complete the hinted utterance, thus reducing students’ efforts to sort out the teacher’s corrective intention. Elicitations were relatively frequently used by four teachers. The overall frequency of elicitation used across the four classes (29%) was only lower than recasts. This result suggests that teachers did not just gently remind learners of their mistakes through recasts, which are often implicitly embedded in negotiations on meaning, but also pushed learners to figure out the gap between their original utterance and target utterance by explicitly inviting them to correct themselves.

Elicitations were found to be very effective in triggering modified output, since students from all the four classes produced a significantly greater proportion of modification (averaging 79.5%) than no modification or no response following elicitation, which is consistent with previous studies (e.g. Lyster & Ranta, 1997; Sheen, 2004; Tsang, 2004). A further exploration of modified output showed that most students produced more successful modification than unsuccessful modification (except for Ella’s class, students in the other three classes were more likely to

produce successful repairs (49%-63.3%); the instances of Ella's students producing successful and unsuccessful modifications were not drastically different (37.3% vs. 45.8%). This finding further proves the effectiveness of elicitations in guiding students to accurately recognize the teacher's intentions, and then repair their initial non-target-likeness on their own. The students' perception reports further confirmed the effectiveness of elicitations, given that students noticed 60.3% of the elicitations and the perception accuracy reached 44.9%.

Clarification request

Teachers used clarification requests to send signals to learners that there might be a problem with their utterances. The results about the frequency of clarification requests showed that none of the four teachers use clarification requests very often (averaging 5%). In a clarification request, teachers neither presented the correct model nor provided any information to the learners on the nature of the error. It was up to learners to reflect on their original utterances, speculate on why it was not understood, and produce modified output in an attempt to make it more target-like. Mary, Jessica and Ella's students were found to be more likely to produce modified output following clarification requests, with the proportion of modification being significantly greater in each class (52.4%-66.7%). This suggests most students were able to recognize the teachers' intention, speculate about gaps in their interlanguage, and try out their new language or content hypotheses with the help of clarification requests. This finding is also consistent with the result about students' perception of the clarification request, which has indicated that they noticed clarification requests frequently (55.6%).

Responding to clarification requests, Sarah's students produced more unmodified output than modified output; and within the unmodified output, those keeping the same error accounted for the greatest proportion. This is also true for the other three cases, which might result from the learners, that is, the learners' not perceiving the corrective intention of the clarification request. An example is presented in (15a):

(15) Learner response following clarification request

a). *Response with no modification*

S: 我将要我们的生活。 [I'm going to our life.]

T: 什么? [What?]

S: (大声) 我将要我们的生活。 [(Louder) I'm going to our life.]

b). *Response with modification*

S: 嗯, 像一个初子。 [Er, like a chu zi. (He was supposed to say "chong zi," meaning "bug.")]

T: 你想说什么? [What do you want to say?]

S: 一个初子, 像一个跳的初子。 [A chu zi, like a jumping chu zi.]

In (15a) the learner made an ungrammatical sentence with the phrase 将要 (*going to*) and failed to recognize the teacher's signal that requested a reformulation of the sentence. Rather, he misunderstood it as a request to repeat the original sentence with higher volume. However, even if learners notice the corrective intention of the clarification request, it was still possible that they produced utterances with the same error due to a lack of knowledge of the target-like model. In example (15b), the student was supposed to say “虫子 (*bug*)” but did not pronounce the word correctly. After the teacher provided the clarification request, he realized the pronunciation problem and tried to explain by clarifying the meaning of the word, even though the pronunciation error remained. Therefore, clarification requests are helpful in pushing

learners to produce modified output, but the implicit negative evidence can also be ambiguous. The absence of positive evidence in the clarification request makes it harder for learners to produce successful modifications immediately, but creates opportunities for them to test their language hypotheses or negotiate for meaning.

Metalinguistic clue and repetition

The occurrences of metalinguistic clues and repetitions were both very low across the four immersion classrooms. Through metalinguistic clues, teachers provided information about the grammatical metalanguage pointing to the nature of the error. The rate of metalinguistic clues ranges from 4.1% to 6.2%, which are consistent with previous studies exploring the oral CF in elementary immersion settings (e.g. Lyster & Ranta, 1997; Vicente-Rasoamalala, 2009). The infrequency of metalinguistic clues might be associated with teachers' common belief that immersion teaching should focus on negotiating subject matter knowledge through the target language in communicative instruction rather than on analytical grammar instruction which traditional foreign language teaching usually requires. As one of the teachers stated in the interview:

“I think immersion rarely has separate grammar instruction, like, er, er...subject, predicate..., but, they are learning it and it's embedded in other kind of instruction; of course there is instruction about grammatical aspects of the language, just not in a way that a traditional foreign language or second language instruction does.” (Sarah, Stimulated Recall 1)

Similar to elicitation and clarification request, results about the students' immediate reactions have shown that metalinguistic clue is also effective in leading learners to produce modified output. Students in all four classes produced significantly greater proportions of responses with modification following metalinguistic clues

(averaging 80.58%), and among instances with modified output, the proportions of successful modifications were also relatively high (46%-64%). As there is no positive evidence included in the metalinguistic clue, the high rate of successful modification suggests that learners recognized that the corrective intention signaled by the metalinguistic clue and teachers' comments about the nature of the error helped them to figure out the gap between their interlanguage and target language on their own.

Corrective repetitions are distinguished from non-corrective repetitions, the former occurring when the teacher's purpose is to draw learners' attention on their non-target-like utterances by repeating the error with a rising tone. The proportions of repetitions across the four classes range from 0.8% to 6.2%, showing teachers rarely used the strategy of repetition to treat learners' errors. This finding is also consistent with previous studies that explored the oral CF in similar instructional settings (e.g., Lyster & Ranta, 1997; Vicente-Rasoamalala, 2009).

The way students responded to repetitions varied in the four classes. While most repetitions occurring in the cases of Mary, Jessica, and Ella led students to produce modified output (60%-100%), Mary's students did not modify their original non-target-like utterances at all (0%). Mary's students were more likely to produce the utterances with the same error following repetitions (66.7%). This suggests that either these students did not recognize the corrective intention of repetitions and thus continued the conversation with the same error, or they did get the corrective signal but failed to modify their utterance to be more target-like because they did not have the relevant knowledge at their immediate disposal to improve the utterance. Compared to the metalinguistic clue, the repetition is less effective in pushing

learners to produce immediate successful modifications. Ella's students were more likely to produce unsuccessful modifications after repetitions (50%). The unsuccessful immediate modification could result from learners' unfamiliarity with content knowledge or the relevant semantic, grammatical, or phonological knowledge of the target language. Nevertheless, successful or not, repairing one's original utterance in response to feedback is beneficial in L2 development. Because as learners develop awareness about the gaps between their interlanguage and target language, they may become more attuned to the grammatical structure or vocabulary present in input that they may encounter in the future, and the relevant forms may thus become more explicit to learners, thereby creating a facilitative context for L2 development (Mackey, 2012).

5.3 Interactional Context

The interactional context in this study refers to the focus of the interactional episode initiated by students' non-target-like utterances. The finding that the interactional context is significantly related to the occurrence of CF and the response to CF indicates that the amount and nature of the CF, as well as learners' immediate response to CF, are influenced by the contextual focus of the interaction, namely, what kind of errors were exposed to the teachers and what problem in learners' utterances the teachers wanted to address. This section discusses teachers' preference of CF strategy in each type of interactional context and how the immersion programs compare to each other in this regard.

5.3.1 A Correction Preference During Content- and Language-Focused Interactions

Generally, the four teachers had similar choices as to whether they provided CF in each interactional context: they were most likely to correct students in language-focused interactions (79.9%-91.8%), followed by content-focused interactions (56.3%-79.3%); whereas they tended not to provide CF during communicative (11.4%-44.1%) and management-oriented interactions (14.7%-35.2%). Accordingly, students were more likely to produce modified output during language-focused and content-focused interactions, with over half of CF leading to modified output in these two types of interactions, and there was less modified output during communicative and management-oriented interactions. The finding that most CF occurred during interactions where language or content was a focus is consistent with what Oliver and Mackey (2003) have found, suggesting immersion teachers might be more alert to students' errors about the linguistic form and meaning as well as content knowledge, from which they tended to create learning opportunities for students. The result that students produced more modified output showed that students did use these opportunities, further suggesting CF strategies were effective in these two contexts. That relatively more proportions of CF occurred in language-focused interactions than content-focused interactions is consistent with Gurzynski-Weiss and Révész's (2012) finding that contexts with a focus on form tend to lead to more provision of interactional feedback than contexts focusing on content meaning.

Teachers being less likely to correct students during management-oriented interactions might result from, as their stimulated recall comments suggest, that the teachers' primary goal was setting up classroom rules when they discussed

organization of lessons and behavioral issues with students. In other words, in management-oriented interactions, teachers focused more on whether the classroom rules were clearly delivered and students were well-behaved. As one teacher stated:

“It’s hard for us to attend to every mistake they make. Sometimes you just want them to behave and follow your rules so that you can keep things going, or you want to quickly get things done due to the time limitation.” (Jessica, Interview 2)

Teachers tended not to view management-oriented interactions as effective learning site, and thus rarely provided CF and kept the focus on meaning when they did provide feedback. The finding that management-oriented interactions were relatively less likely to attract immediate modified output from students further supports this assumption, because it has implied that the teachers’ primary goal of providing feedback may be having students to get correct orders and rules rather than pushing them to have immediate repair of erroneous understanding. Similarly, teachers also provided less CF during communicative interactions (averaging 32.98%). This is different from what Oliver and Mackey (2003) found in the content-based ESL classrooms, where over half of the learner errors were corrected in communicative contexts. The reason why teachers did not provide CF in communicative interactions as often as in content-focused or language-focused interactions might be that communicative interactions usually occurred between more informal and unplanned chit-chat in immersion classrooms, when students and the teacher engaged in sharing personal life experience and fun facts by using the target language. Again, during these interactions, teachers tended to move on in terms of the topic and not to attend to the error made by learners as long as there was no communicative breakdown.

Accordingly, there was less modified output produced in the communicative context, since students had fewer opportunities to be pushed or hinted to modify their errors.

As the provision of CF and learner response to the CF differed according to the type of the interactional context, the nature of CF also varied according to the context pattern. There was a greater proportion of elicitations provided in interactions focusing on content. As discussed in the last section, teachers often used elicitations to explicitly invite students to correct themselves; elicitations also effectively prompted modified output. In content-based settings, teachers tended to maintain a strong focus on content and to use strategies that encourage students to generate more and deeper content understanding (Kong, 2009), and the four immersion teachers in my study followed the same pattern. Elicitation was thus the teachers' choice towards this end, since teachers would be able to grasp the immediate effect of their guidance for students' content comprehension and make corresponsive adjustments.

In language-focused and communicative interactions, CF was mostly provided in the form of recast. That communicative interactions attracted more recasts than other types of CF is not surprising, since recasts have been considered as devices that can connect discourses (Gibbons, 2003) and maintain the communicative flow. Teachers preferred recasts over other types of CF in the context of language, which is slightly different from Oliver and Mackey (2003), which found that both recasts and explicit corrections were frequently used in this type of context. This might be related to Chinese immersion teachers' belief that unless the salience is necessary, implicit corrections are helpful enough to young learners since their affective filter would be raised otherwise:

“I try to avoid directly pointing out the mistake, which would give kids negative feelings. I prefer stressing the correct thing. So, as to the language, kids have different levels. I don’t agree—of course sometimes I would be harsh—I don’t usually say ‘you are wrong’ or something like that. I do correct them when they are wrong, but I wouldn’t directly say it. I would add some examples, and adjust their language a little bit. Actually I think they are more acceptable to little adjustment than directly pointing out the mistake.”
(Mary, Stimulated Recall 1)

During management-focused interactions, CF was most often supplied in the form of recast and elicitation, suggesting either that teachers tried to provide rules and behavior models while keeping the interactional flow through recasts, or they wanted students to report the right rule—and how they should convey that information through hinted elicitation. Thus there were slightly higher proportions of modified output in management-focused interactions than in communicative interactions (averaging 38.2% vs. 33.8%), which differs from the zero rate of modified output in this type of interactions as reported by Oliver and Mackey (2003). It is encouraging to see that even though significantly fewer errors received CF in the context of management than in the other three contexts, the feedback was still effective, leading to modified output to some extent. This result suggests the possibility of extensive use of more than one form of CF, instead of heavy reliance on only one type of CF, could create more opportunities for students to produce modified output.

5.3.2 A Comparison of Total Immersion and Partial Immersion

Overall, the four interactional contexts varied across the two immersion programs. More interactional episodes focused on content in the total immersion classrooms, whereas interactional episodes focused on language more frequently in the partial immersion classrooms. The divergence may be due to the different daily lesson structures in two programs. The partial immersion program included more

lesson periods and longer instructional time that specifically targeted students' language skills within one Chinese instruction day, such as lesson periods that included *Morning Meeting* (students discussing life experience and practicing conversational language), *Story Time* (students listening to part of a story and expressing their understanding of the story), and *Chinese Language* (explicit instruction of Chinese language in the content lessons). On the other hand, the total immersion classes either had only one lesson period of explicit language instruction (i.e., teaching vocabulary and practicing sentence-making while having students read a text) or had one such language lesson period together with one short daily routine period in which students practiced describing the weather and date in Chinese. The expanded time allotted to language instruction and practice enabled students and teachers to delve more deeply into the language-focused interactions in the partial immersion program than in the total immersion program. Similarly, the more time spent broadly on the content resulted in more content-focused instructions in total immersion classrooms than it did in partial immersion classrooms.

The two immersion programs also had a slight difference concerning the provision of CF in each type of interactional context: compared to the partial immersion program, teachers from the total immersion program provided relatively more proportions of CF in both language-focused (averaging 82.3% vs. 91.25%) and content-focused interactions (averaging 60.85% vs. 74%). Given the difference in correction rate, the extent that the two contexts triggered modified output in the two programs, however, did not differ (averaging 53.75% vs. 53.55%; 54.95% vs. 58.65%). This finding suggests that during interactions focusing on content or

language, CF provided by the partial immersion teachers may be more effective in leading to the immediate modification of learners' non-target-like utterances than that provided by the total immersion teachers. While the four teachers relied on similar CF strategies (elicitations and recasts) in these two interactional contexts, it is possible that students' perception of CF contributes to the effectiveness of CF. Indeed, the students' stimulated recall data has showed that students in the partial immersion program were more likely to notice the CF (averaging 66.7%) than those in the total immersion program (averaging 39.55%). More details about the learner perception of CF will be discussed in the following section.

The occurrence of management-oriented interactions, the provision of CF, and the learner response in these two types of contexts were not consistent within each program, which means that the four classes exhibited distinct features. Specifically, compared to the other three cases, Mary and her students were most likely to engage in management-oriented interactions (18.6%) and were also more likely to correct students in this types of context (35.2%), implying that there might be more management issues in Mary's class, and thus more instances where students might make mistakes and be corrected. My observations did confirm this assumption. Mary spent quite a bit of time dealing with discipline and behavioral issues, which she attributed to the large class size (the class size is larger, at 25, than the other three, 10-17 students). Contrary to Mary, Sarah corrected her students least often in management-oriented interactions (14.7%), which led to a relatively lower proportions of learner modification (20%) in this type of context. Jessica provided a relatively lower proportion of CF in management-oriented interactions (21.4%), but

her students were most likely to produce modified output following CF during this type of interaction (80%). This might be related to the choice of CF strategy. Significantly more elicitations were used by Jessica (46.7%) when she was dealing with management issues. Compared to Jessica's case, there was a similar rate of management content (23.1%) in Ella's class, which however triggered much less modified output (13.3%). Since Ella relied more on recasts to treat learner errors in management-oriented interactions, it seems that recasts are less effective than elicitations in resulting in immediate modified output in this type of interactional context. This interpretation is also based on the finding that reformulations generally trigger fewer modifications than prompts. In communicative interactions, the cases of Mary, Sarah and Ella were similar, whereas Jessica's case stands out. Again, the least proportion of CF attracted the largest proportion of modified output in Jessica's class, which can also be attributed to Jessica's preference of elicitations in addition to recasts, given the high rate of modified output that an elicitation can lead to.

5.4 Perception

Students' stimulated recalls showed that learners perceived oral CF whether particularly noticing the CF or not, and accurate perceptions of CF were instances in which learners noticed both their non-target-likeness and the gap between their initial non-target-like utterances and the target utterances. In addition, accurate perception was found to be associated with the type of recipient and the type of CF. This section interprets results as to how Chinese immersion students perceived CF and the possible factors that influence their perception.

5.4.1 Noticing the Corrective Feedback

The results of this study revealed that students were generally more likely to notice the CF when they were involved in the content-focused interactions (61.38%), meaning that when the teacher provided CF targeting errors about the academic knowledge, students were more likely to perceive the corrective intention. This finding is consistent with researchers' claims about the benefits of interactions (i.e., Gass, 1997; Long, 1997), which argues that interactions can trigger feedback that orients learners' attention on a portion of input and thus facilitates acquisition. Since learners' reports about their perception matched teachers' corrective intention for most of the time during content-focused interactions, the CF did function to direct students' attention to aspects of their utterances that deviated from the target utterances and thus promoted their comprehension of the meaning that was related to the subject matter in the second language. Students were less able to notice the CF in language-focused interactions (49.28%). However, it can still be considered as a weak support for what is claimed by the interaction approach, since the proportion reached approximately half a percentage.

This study found that students from the total immersion program were less likely to notice the CF (averaging 39.55%) than those from the partial immersion program (66.7%). Given that the interactional episodes included for stimulated recall include a similar proportion of interactional contexts, the possibility that the different degrees of noticing are a result of students engaging in an uneven number of interactions for each type of focus is excluded. Additionally, as Philp (1999) suggested, learners' capacity of short-term memory capacity, prior familiarity with

the input, and processing skills may constrain the noticing of interactional feedback. It is possible that the differences among the 12 focus students from the two immersion programs in terms of their cognitive factors and familiarity with the input provided by their teachers has resulted in the noticing variation. The salience of CF might also affect learners' perception, as Sharwood Smith (1993) proposed—that the more salient the input, the more readily it is noticed by learners. However, such is not the case in this study, because the focus students from the total immersion program watched more interactional episodes with explicit feedback in their stimulated recall sessions, but had less noticing of CF. As I did not assess students' cognitive abilities, nor did I measure their familiarity with input, a further examination of the link between interactional context and noticing of CF was conducted in this study, because it has been established in the literature that there is an association between learners' perception of CF and the feedback target (e.g. Mackey et al. 2000). In a departure from Mackey et al. (2000), in studying solely the language teaching and categorizing feedback episodes based on the linguistic feature, this study looked at content and language integrated teaching, and the CF episodes being used for examining learners' perception included both language and content episodes. The results indicated that in either context, students from the partial immersion program noticed more proportions of CF, suggesting that partial immersion learners were more likely to notice the CF regardless of what type of error the teachers targeted. Therefore, the link between the interactional context (feedback focus) and noticing of CF is not strong in this study. This finding, together with results discussed above, seems to provide possible support to the assumption that the selected students from

the partial immersion program might either have had better cognitive abilities or had better familiarity with the input provided through CF than the selected students from the total immersion program.

5.4.2 Perception Accuracy in Relation to Feedback Strategy and Recipient Type

A detailed investigation of instances in which students noticed the CF revealed that even if they noticed teachers' corrective intention, they did not necessarily notice what went wrong or how to improve. Accurate perception of CF refers to instances in which learners notice both the error targeted and how it should be improved, and has been considered to be directly related to the efficacy of CF. Drawing on Schmidts' (1990) noticing hypothesis, Roberts (1995) argued that the efficacy of CF is not only directly related to the learners' recognizing what is correct but also to learners' understanding the nature of the CF. Thus accurate perception of CF thus can be considered as an indicator of the CF efficacy: the more accurately the recipient perceives the CF, the more effective the CF is.

Based on teachers' stimulated recalls, the four Chinese immersion teachers generally perceived the CF strategy as two broad categories—prompts (i.e. clarification request, metalinguistic clue, repetition, and elicitation) and reformulations (i.e. recast, explicit correction, elaboration, and confirmation). The study found that the perception accuracy has a significant association with the CF category. Results about learners' stimulated recalls revealed they were more accurate on prompts than reformulations (47% vs. 32.4%), which, however, only happened when the interactional contexts were content. When watching language-focused CF episodes, students exhibited similar perception accuracy on prompts and

reformulations (35.1% vs. 36%). However, they were slightly less accurate in perceiving reformulations than prompts when they interpreted content-focused interactions. This finding suggests that students were most accurately perceptive when teachers corrected the content error through prompts; that is, they were most likely to recognize the error and know how to repair it. When students' language errors were the interactional focus, they perceived prompts and reformulations at a similar accuracy rate. This finding can be interpreted based on the function of output proposed by Swain (1995): output, particularly modified output, can trigger noticing of learners' own utterances and also enable them to reflect on the target utterances. As discussed in Section 5.2, prompts are generally more likely to push modified output than reformulations. In fact, prompts included in the stimulated recalls were indeed more likely to lead to modified output than reformulations (73.7% vs. 52.4%). Prompts tend to trigger more modified output, based on Swain's (1995) interpretation, and therefore can result in more accurate perceptions, because the process of modifying learners' own original utterance reinforces their awareness and reflection of CF. That prompts led to the accuracy advantage in content-focused interactions, rather than in the language-focused interaction, might be due to the fact that, among the interactional episodes that include prompts, more modified output was produced in the content-focused interactions than language-focused interactions (70.6% vs. 56.5%).

In addition, the type of recipient was found to be closely related to the perception accuracy: overall, direct recipients of CF (students who directly receive CF from the teacher) were significantly more likely to have accuracy perception than

indirect recipients (students who observe the teacher correcting peers), regardless of the type of interactional context they were engaged in (51.9% vs. 31.8% and 59.3% vs. 35.6%). Looking closely at learners' perception in relation to the CF type, direct recipients had more accurate perception of most types of CF than indirect recipients, except for the metalinguistic clue. Part of this finding is consistent with Nabei and Swain (2002), which found that recasts were more accurately noticed in more directly engaged interactions than otherwise, but different from Kim and Han (2007), which found that the type of recipient did not affect the learners' perception accuracy. As Kim and Han (2007) did not elaborate on the zero influence of directness in their study, the finding in this study along with Nabei and Swain (2002) seems not to be surprising. In direct interactions with the teacher, students have focused more attention on the feedback provided by the teacher, and therefore, are more likely to recognize the gap between their error and target-like model, whereas there is more chance of inattention and distraction in observations of peers' interactions.

Nevertheless, it is encouraging to see that indirect recipients also were likely to have accurate perception of the CF directed to their peers, albeit the overall smaller proportion. This shows that even indirect observations of peers' interactions with teachers could generate accurate perception. Among the seven types of CF included in the stimulated recalls examining students' perception, the elicitation was the type that led to relatively greater proportions of accurate perceptions from indirect recipients (41%), suggesting that elicitation was relatively effective to indirect recipients. The finding further supports the claim about the elicitation I made in

Section 5.2 that elicitation, being more likely to trigger modified output, are more facilitative in learning.

5.5 Conclusion

This chapter presents a discussion of the findings in this study by further tethering them to the relevant literature. Specifically, the chapter engages in discussing four main points concerning the oral CF in Chinese immersion classrooms. First, teachers corrected students' errors most of the time and used a variety of CF strategies to deal with students' errors in Chinese immersion classrooms. Different types of CF triggered different reactions from students, thus bringing diverse learning opportunities. In general, the four teachers showed one important commonality in terms of their choice of CF strategies: each preferred elicitation and recast. They were also found to use elaboration relatively more often.

Second, both modified output and non-modified output produced immediately following the CF by students were examined, although the benefit of modified output in L2 development has been more established in the literature (e.g., Swain, 1995). Generally, prompts (including elicitation, metalinguistic clue, repetition, and clarification request) led to more immediate modified output than reformulations (explicit correction, recast, elaboration, and confirmation). However, explicit correction and recast were more effective in eliciting successful modifications of errors than repetition and clarification request. Recognizing the controversy about its effectiveness in L2 classrooms, this study found the recast to be potentially effective for two reasons: (a) while learners were less likely to produce modified output after a recast, they were found to react by showing their acknowledgment of CF, which was

considered as possibly facilitative in raising the learner awareness of CF, albeit in the absence of modified output, and (b) the ambiguity of the recast might depend on the interactional context in which the teacher and students engaged: the corrective intention of recast might only be ambiguous in communicative and management-oriented interactions that were found to occur infrequently, the assumption of which has been consistent with the finding that the learner perception of CF that students tend to notice the corrective intention of recasts.

Third, teachers and students generally engaged in negotiations through CF following various interactional contexts (including content, language, communication, and management), and the context was found to affect the teachers' choice of CF strategy and students' immediate response to it. Overall, contexts focusing on content and language allowed more CF to occur than contexts focusing on management and communication in the four cases; more modified output being found in the former two types of contexts further showed the CF strategies were more effective since learners did use these opportunities to revise their initial utterances or test out their hypotheses of language or content knowledge. In addition, the nature of immersion instruction and teachers' perspectives on immersion teaching might result in a distinctive preference of the CF type in each context. Moreover, in terms of the interactional context, the two immersion programs differed from each other to some extent, despite the similarities. The longer instructional activities specifically targeting learners' language skills might have resulted in more language-focused interactions in the partial immersion classrooms. That the CF occurring in the partial immersion program were more effective in triggering immediate modified output than

those occurring in the total immersion program might be related to learners' perception of CF, since the investigation of learners' perception revealed that the partial immersion students were more likely to notice the CF than those total immersion students.

Fourth, learners tended to notice the CF in content-focused interactions, and the perception accuracy was affected by the type of CF that was provided and who received the CF. Learners being more likely to notice the CF in content-focused interactions provides support for the benefits of CF proposed by the interaction hypothesis (i.e., Long, 1996), which argues that CF facilitates L2 acquisition as it directs learners' attention on the input. In content-focused interactions, learners had more accurate perception of prompts than reformulations, because prompts allowed learners to produce more modified output which is considered to trigger noticing of learners' own utterances and reflection on teachers' input (i.e. Swain, 1995); the variation happening only in the context focusing on content rather than language is related to the fact that content-focused interactions generated more modified output than language-focused interactions. Direct recipients of CF generally had more accurate perceptions of CF than indirect recipients, as the learners engaged in direct interactions with the teacher had more focused attention.

Chapter 6: Implications and Future Directions

This chapter concludes the major empirical contributions of this study to the field as well as synthesizes how the study sheds light on the interaction approach to SLA based on the discussions of findings from the previous chapter. In addition, the chapter discusses the contributions of this study to the L2 teaching practice, particularly immersion education, concerning four dimensions: the way to use appropriate CF strategies, balancing content and language instruction, administering immersion programs, and teacher education. Moreover, directions for future research also are presented.

6.1 Empirical Contributions and Theoretical Implications

Early L2 researchers shared one claim that CF and modified output were less common in laboratories than in classrooms, because there tends to be less pressures on task design and performance in the latter setting (e.g., Chaudron, 1977, 1986). While more recent studies argue against this claim and prove the provision of CF has been a common phenomenon in different classroom contexts including immersion (e.g. Lyster & Ranta, 1997; Lyster & Mori, 2006), this study responds to this empirical question about the frequency of CF and modified output by demonstrating that the occurrence of CF along with modified output is common in elementary Chinese immersion classrooms. Although the study found that the pervasiveness of both the CF and modified output was dependent on the interactional context, the Chinese immersion setting is an area worth studying, given the growing number of immersion classrooms. The finding on the various types of CF strategies being used

in the Chinese immersion classroom also adds to the literature on the different forms of interactional adjustment. Additionally, the finding that prompts are more effective in triggering modified output than are reformulations—at least in the Chinese immersion classrooms—shifts the research that interaction researchers traditionally have put on emphasizing on explicit/implicit dichotomy when studying the effect of CF into a focus on the nature of CF. In summary, this study has developed the analytic model describing oral CF based on the initial model proposed by Lyster and Ranta (1997), and applied the model to a database of interactions in a new classroom context. Meanwhile the study has gone beyond documenting the distribution of CF in relation to learner response, but has also explored the link among the CF, interactional context, and learner perception.

This study has used the interaction approach to SLA as the guiding theoretical framework, which has highlighted the relationship among five major concepts and their influence on learning—input, interaction, output, feedback, and learner internal mechanism (e.g., Gass & Mackey, 2015; Long, 1996; Mackey, 2012; Schmidt, 1990; Swain, 1995). The study built upon this line of research to construct a deeper understanding of the intricacies and particularities of CF in the context of Chinese immersion teaching. Being exploratory in nature, this study provides implications for the interaction approach from three major aspects: benefits of interaction, conceptualization of output, and function of output.

As summarized in previous chapters about literature and findings, the main argument of the interaction approach is that through interaction, learners' selective attention is directed to something new in input or problematic aspects of knowledge

and production, which thus promotes the development of L2. Because many researchers have presented compelling evidence that supports the benefits of interaction in L2 learning based on evidence that was derived mainly from what happened in laboratories (see Mackey & Goo, 2007 for an overview), there have been doubts about the applicability of the interaction approach in the classroom context. Insofar as research into the interaction just starts to tap into fine-grained differences of classroom contexts, such as second language versus foreign language settings, this study has investigated the teacher-student interactions, initiated by students' non-target-like utterances, that emerged from intact classrooms, particularly in foreign language immersion settings. Although the study did not measure the product of learning (i.e., performance on tasks focused on certain linguistic features) to examine the effect of interactional oral CF, it did explore the process of learning by probing into students' interpretations of on-task interactional conversations that contain a CF. While learners' retrospective reports about their thoughts when they were engaging in the interactions have been considered to be the access to their internal mechanism (e.g., Gass & Mackey, 2000), their noticing of the corrective intention or accurate interpretation of the gap thus seems to be the evidence that reveals the learning process. This study did find students noticing corrective intentions that were conveyed through the interactional conversations typically containing CF, thereby supporting the claims of the interaction approach. Furthermore, even if the study is more descriptive in nature and therefore perhaps not readily generalizable, it at least provides examples that counter the claim that the interaction approach cannot be generalized beyond the laboratories.

This study re-conceptualizes the output produced immediately following the CF. In the interaction research, the output that researchers usually focus on is the modified output, which is the process of revising one's original utterance in response to the CF (Mackey, 2012). As the role of modified output in L2 development has been frequently examined by interaction researchers, there has been less discussion of unmodified output (output not being rephrased in response to the feedback). Lyster and colleagues, in their series of studies (e.g., Lyster & Mori, 2006; Lyster & Ranta, 1997; Panava & Lyster, 2002), investigated interactional CF from the perspective of learner uptake, which includes both modified output and unmodified output. These researchers have taken the concept of uptake to illustrate what learners attempt to do with the teachers' CF, implicating that the teachers' corrective intentions go heeded when there is uptake. This conceptualization of the learner response to CF has been criticized by other researchers (e.g., Long, 2007; Mackey & Philp, 1998) who have stated that equating uptake with learning is problematic. Although in the recent research (e.g., Lyster, 2007; Lyster et al., 2013), Lyster and colleagues have argued that the critique had misconstrued learner uptake as an instance of acquisition, and clarified that uptake refers merely to a discourse move, this study has not used the term "uptake" to conceptualize learners' immediate utterances following CF. The term "uptake" itself connotes an active involvement of learners' internal mechanism; however, along with other studies (e.g., Mackey et al., 2000), this study found that learners' production following CF (particularly unmodified output) was not necessarily related to learners' perception of CF. Therefore, this study refers to the output immediately following CF as learner response, which is believed to be a more

objective description. Learner response may be associated with learners' noticing CF (e.g., instances in which learners query about the CF), but it is not an indicator of learners' attention to the CF.

The importance of output has been emphasized in a series of interaction research (e.g., Swain, 1985, 1995, 2005). Three essential functions of modified output—triggering notice of feedback, facilitating reflection of target input, and promoting automaticity—have been highlighted. This study found a link between the immediate modified output and accurate perception of CF: the more modified output produced, the more likely the learners noticed the gap, which confirms the first two roles the modified output plays in terms of advancing the engagement of the learner internal mechanism. However, it is possible that the immediate modified output is merely a mechanical repetition or echo of the target model. Therefore, although the production of modified output does not guarantee the presence of perception accuracy, pushing for modified output is helpful in improving the perception accuracy; in other words, it facilitates the learning of the meaning and form, based on the assumption that consciously noticed input contributes to learning (Schmidt, 1990, 1993).

6.2 Practical Implications

6.2.1 Strategies for Corrective Feedback

Given the benefits of the oral CF being revealed by the literature and also confirmed by this study, L2 teachers, particularly immersion teachers, are encouraged to use CF strategy in their teaching. As the results of this study have indicated that different types of CF produced learners with distinctive responsive opportunities,

teachers might want to consider the whole range of strategies they have at their disposal rather than relying extensively on one or two types of CF (recast and elicitation). Since there have been differences in the nature and function of prompts and reformulations, teachers could choose the appropriate category of CF according to their instructional goal. If they focus on helping learners to have self-generated revision of their errors and meanwhile checking their responses to monitor the immediate effect of the correction, prompts are more appropriate; if they emphasize providing the correct model and not necessarily urge learners to repair their errors, reformulations might be the better choice. In addition, being consistent with what Oliver and Mackey (2003) found regarding the interdependences among the interactional context, the provision of CF and how learners react to the CF, this study also indicates that learners could encounter different linguistic environments that have different interactional contexts. Thus, to ensure the production of modified output, teachers cannot simply adjust their choice of CF types, but also should reorganize the interactional context.

Teachers should view interaction contexts in communication and management as potential learning sites, since CF could be effective when provided in both the communicative and management-oriented interactions. It should be noted that in communicative interactions, teachers might focus on keeping the communicative flow and tend not to treat errors; if there is the necessity for teachers to deal with the errors, they could consider less explicit CF such as recast and elaboration, because learners could see the correct models through these two types of CF while the communicative flow is still maintained. In addition, this study revealed that applying multiple types

of CF in management-oriented interactions could trigger more production of modified output. In spite of the recast and elicitation that also occur in other contexts, the explicit correction is another type of CF that is suitable for management-oriented interactions. Because this type of interaction targets learners' erroneous understanding of rules about the lesson organization or their behavioral problems, explicitly pointing out the mistake and at the same time giving the right model enables teachers to manage the rules and behavioral issues in an efficient way.

Another important factor that teachers need to take into consideration when they make decisions about the CF is individual difference. Individual difference refers to individual variation in terms of the content knowledge, language proficiency, and affective level. The level of students' content knowledge and language proficiency influences the extent to which the teacher may choose to correct learners' errors. If the language meaning and form go beyond learners' current level, it is not unusual to see more mistakes made by learners, and teachers would ignore unimportant ones or use reformulations more often to ensure the delivery of the target language or knowledge. Teachers also need to pay attention to learners' affective level, which refers to their feelings, moods, and attitudes towards CF. As the immersion teachers in this study pointed out, students' tolerance to negative feedback needs to be considered when formulating an appropriate CF. That is, the less tolerance of the negative feedback from learners, the more encouragement or implicit the delivery of the CF there should be:

“If XXX made the same mistake, I would give waiting time instead of directly correcting the mistake. Because kids who are very active don't need much encouragement, but to sensitive kids like XXX, I'll give more implicit

elicitation and encouragement. So they wouldn't be afraid of speaking out and making mistakes.” (Mary, Stimulated recall 1)

“XXX is shy and introverted.... he wanted to use his own words in Chinese to describe but didn't have that much vocabulary, so I asked him a lot of questions to help him to organize his expressions, not correct errors word by word.” (Sarah, Stimulated recall 2)

Additionally, more small group or individual interactions should be encouraged in immersion classrooms. According to research about group size and learning (e.g., Anderson, Wilkinson & Mason, 1991; Wilkinson & Fung, 2002), students performed better in smaller groups, because they received more individualized assistance in small groups while there was more chance of social loafing in whole class instruction in which students could shirk responsibility. The small group size allows learners to have individual interactions with teachers, thus teachers can detect the non-target-likeness in their utterances more often and provide the corresponding CF efficiently. Moreover, learners could benefit more from direct interactions with teachers, because there is more chance for them to directly receive the CF than indirect observers of the CF targeting their peers.

6.2.2 Balancing Content and Language Instruction

One challenge many immersion teachers or teachers working in other content-based language instructional classrooms have faced is to balance the content and language instruction (Cammarata & Tedick, 2012; Kong, 2009; Lyster, 2007; Lyster & Ballinger, 2011). In particular, teachers tend to have difficulty identifying the language focus. Lyster (2007) has proposed an alternative approach—counterbalancing content-based instruction with form-focused instruction as a solution to the balancing issue. The approach has elaborated strategies that include

language awareness tasks to focus students on noticing language forms, content-based tasks, form-focused tasks, practice activities, and it explained the role of interactional feedback in each instructional option. Nevertheless, what needs to be highlighted is the role of CF in connecting the content instruction and language instruction, and how the CF functions in the ways not only to allow the interaction to flow from a focus on meaning to a focus on form, but also make the interaction go back to a focus on meaning through language use; doing so “ensures that the language forms are linked to their functions and to the meaning-driven content instruction that defines the immersion classroom” (Cammarata & Tedick, 2012, p. 265). For example, this study found a frequent occurrence of language-focused interactional episodes in math or science lesson periods across the four immersion classrooms, suggesting the CF could function as an instructional technique to shift the focus towards the language form from content meaning; and the occurrence of content-focused interactional episodes in the lesson periods of Chinese Language Arts indicates that the CF has shifted the focus from linguistic forms to the meaning-driven content. According to Cammarata and Tedick (2012), the difficulty concerning the content and language integration mainly relies on three aspects: identifying “what language to focus on,” figuring out “how and when to integrate that language in the context of content instruction,” and deciding “how to follow up on the language in their assessment strategies” (p. 261). In the following, I discuss the implementation of CF strategies in relation to these three questions based on the findings of this study.

What Language to Focus On

In content-based learning settings like immersion—while it might not be too difficult for teachers to set language objectives for a unit or a semester of study, as they may be directed by the program curriculum—knowing the exact language that students need and lacking metalinguistic knowledge of the target language are key challenges for teachers (Bigelow, 2010). Baecher, Farnsworth, and Ediger (2014) found that teachers tended to focus on language sub-skills (speaking, writing, reading, and listening) or vocabulary more often than structure and function in content-based ESL classrooms, which may be due to limited time for a single lesson in those contexts. The teaching of subskills was not observed in this study, neither did the teachers heavily stress on vocabulary; however, instruction about language structure and function in meaningful contexts could have occurred more often. Teachers should be encouraged to decide on what language to focus on by positioning relevant language in a particular content material, choosing key structures and discourse functions, and then making clear which language might specifically be required in understanding, discussing, or writing about specific content. Additionally, teachers should have the metalinguistic knowledge of the target language to be able to adeptly pull language foci out of specific content material and build assistance for students to achieve language accuracy that tends to be missing among many immersion students. Because many immersion teachers are native speakers of the target language and did not learn the language in an analytical way, they usually lack the metalinguistic knowledge of the language. Therefore, they need to seek formal training to acquire the knowledge. Although grammar instruction is not, and should not be, a focus in immersion,

teachers themselves should have mastery of relevant knowledge in order to help students acquire grammatical structures and use the language accurately.

To figure out the language needed for a content lesson is not only about choosing the appropriate textbook or teaching materials for students. The teacher also needs to deliver the content in the target language in a way that is comprehensible to students, and plan activities to lead students to practice the target language at the appropriate academic and proficiency level. Both steps are essential in incorporating language in content-enriched lessons, but teachers might easily overlook the provision of comprehensible input in their practice. Based on sustained observations of immersion lessons for this study, three ways can be followed to deliver content in comprehensible input: by creating contexts for supporting comprehension, creating comprehensible language, and creating meaningful interaction. For example, to create contexts to support students' comprehension, the four teachers in my study constantly connected the topic to students' daily life and used many gestures and visuals to make the meaning clear. In addition, the teachers offered comprehensible language in ways they paraphrased the message, slowed down the rate of delivery, defined words by examples, used key words and phrased more than once, as well as used transition words and familiar structures. In creating meaningful interactions to achieve comprehension, teachers actively used comprehension-checking questions, and also provided opportunities for students to ask for clarification and confirm understanding.

How and When to Integrate

CF is a reactive instructional strategy focusing on learners' non-target-like utterances, for which teachers are unable to know exactly what to expect. Teachers

need to be sensitive to students' errors but not necessarily to correct every single mistake. The errors may mostly involve content meaning or linguistic features, such as semantic, phonological, morphosyntactic, and lexical (Mackey et al., 2000). It is possible that students err on the linguistic feature when they are talking about the content knowledge, and vice versa. This is when the CF functions as a reactive strategy to help students to process the language form through content or negotiate the content meaning through language. In both cases, CF strategies aim to raise students' awareness of problems in their utterances and help them to solve the problems. CF strategies can vary in accordance with the context. For instance, in this study, Sarah tended to get students' attention by raising her voice when she provided a CF targeting a linguistic error in math and science lessons; whereas she usually asked many questions to prompt students to reflect on their mistakes in content comprehension and elicit correct understandings in the language comprehension and production lesson periods.

However, a reactive approach itself is not sufficient in effective immersion teaching because it is incidental and less systematic. Therefore, proactive approaches that are pre-planned should also be prepared, and are of equal importance since they could enable students to notice and use target language features in a more systematic way (Lyster, 2007). During the planning process, teachers need to decide the key content-related language that students have to acquire to build upon their existing content knowledge and language level. At the same time, as mentioned above, teachers should also pay attention to the language they use while they deliver the teaching and ensure the comprehensibility of their instructional language. For

example, Jessica in my study was often observed to adjust her language to a level that is appropriate to students by simplifying or elaborating the input language. She generally avoided using more difficult structures (i.e., compound-complex that contains three or more clauses), and kept her instructional language as succinct as possible. If there needed to be a teacher monologue during the instructional modeling, she tended to highlight the key points by adding transition words (i.e., first, second and third). Body gestures and drawing were the two techniques she frequently used to elaborate her verbal language when she sensed a comprehension difficulty from students.

Proactive approaches help immersion teachers to plan activities based on the content objective and the language objective stipulated by the curriculum. For example, more controlled production practice such as role plays and games, which are designed to relate to the theme of the content and meanwhile draw attention to properties of target forms, would help students to develop their interlanguage forms into be more target-like. Content-based immersion teaching does not equate with zero instructional time in the language, namely, the instruction of linguistic features of the target language. Both programs involved in this study had a separate lesson period in which teachers scaffold students to learn Chinese through different activities, such as dice game and friends searching game that help to strengthen students' vocabulary learning, pronunciation practice with the support of technologies (laptops), various sentence building games that familiarize students with the morphosyntactic structures, as well as role plays that facilitate pragmatic knowledge of the language. However, the language instruction in immersion distinguishes from the decontextualized

grammar instruction in traditional foreign language classrooms, because it is usually designed to engage students in either teacher-fronted instruction or student-centered activities in communicative ways, in other words, explicit instruction about the linguistic features must happen in ways that do not compromise interactive and meaning-driven classroom practices. In addition, connections to the content curriculum are always made through both reactive approaches and proactive approaches. As Kong (2009) proposed, lessons should be structured in a cyclical manner to revisit content and content-related language as often as possible.

Assessment

Apart from the summative assessments on the subject matter and the language, formative assessments (i.e., teachers' observational reports, student presentations, and in-class worksheets) are essential in the immersion setting. Formative assessments are school-based or class-based and continue throughout the period of learning, which allow teachers to monitor their instruction and make corresponding modifications based on students' performance (Genesee, 2011). Teachers in this study agreed that formative assessments are more individualized and make more sense to them since they are students' immediate reactions to the teaching. The formative assessments need to be level appropriate. For instance, Sarah and Jessica who were teaching students at higher proficiency levels in this study tended to design self-prepared presentation projects in science lessons to assess students' ability to communicate the academic content; while Mary and Ella provided additional supports to their lower proficiency level students in the same form of formative assessments, such as giving a list of sentence structures and graphic organizers. CF

could be considered as an informal formative assessing strategy, because CF strategy is reactive and ongoing, and the choice of CF strategy is teacher specific, or it varies based on different students' needs. Through CF, teachers are clear of what students know or do not know and what can be done to help, such as adjusting their language input, modifying the teaching materials, and adding or reducing activities.

6.2.3 Teacher Education

For immersion teachers to develop pedagogies balancing content and language, they need a particular knowledge base (Cammarata & Tedick, 2012; Tedick & Fortune, 2013; Tedick et al., 2011; Yao, 2015). This knowledge base refers to second language proficiency and immersion-specific knowledge and skills. Specifically, the knowledge base for immersion teachers can be delivered in courses about second language acquisition, teaching methods, cross-cultural communication, educational linguistics, integrated curriculum development, immersion pedagogies, and assessment, as well as biliteracy education. For the immersion pedagogies, the oral CF should also be emphasized in terms of its categorization and its application in the general second language context, as well as its function in the language and content integration.

There are limited numbers of formal bilingual or immersion teacher preparation programs; most teachers learn on the job and through professional development (PD) programs (Cammarata & Tedick, 2012). For example, teachers in this study obtained a degree/license either in generic teacher education, or in second/foreign language education. Generic teacher education programs rarely provide training on language teaching for pre-service teachers while language

education programs tend not to prepare pre-service teachers to teach content. To accommodate the growing immersion programs in elementary schools or even in secondary level, tertiary-level institutions should set up teacher preparation programs that emphasize both on content and language instruction. If possible, the traditional second/foreign language education programs should expand their focus to address the preservice needs of immersion teachers, and courses dedicated to teaching a particular language in addition to a general teacher licensure curriculum should be added in traditional generic teacher education programs.

Apart from having focused pre-service training, consistent and need-based in-service training is critical for immersion teachers to obtain up-to-date theoretical knowledge and practical pedagogies. In-service PD programs need to target the specific needs of the immersion teachers. In addition to guiding teachers in developing an understanding and awareness of the interdependence of language and content, the PD programs should provide pedagogical knowledge to transfer this awareness and understanding to the curriculum design and instruction, considering for example what the content and language integration should look like in each subject lesson (i.e., teaching math in Chinese or teaching science in French). Furthermore, it is also of equal importance for PD programs to introduce research about immersion and practical implications of these research studies. The research-practice disconnection has long been an issue (Coburn & Stein, 2010) in that educational research results usually fail to reach practicing teachers, especially those who have been away from formal teacher education for a while. Thus, PD programs could function as platforms for teachers to study the implementation of research-

based innovations. Effective PD programs that bridge immersion related research and teaching would encourage immersion teachers to reflect on their teaching practice and create more immersion-specific teaching materials and methods. Importantly, how to use CF in immersion classrooms should be introduced in a systematic manner in PD programs, in particular, to include knowledge about various forms of CF, the multiple learning opportunities that CF could bring to students, and how to balance content and language instruction through CF.

6.2.4 Immersion Program Support

As to the program support, the Chinese immersion teachers in this study emphasized that they were provided with various mental support or access to updated standards, but also indicated the lack of the guidance that would specifically address how to better incorporate the balance of language and content in their classrooms. As Cammarata and Tedick (2012) suggested, “if a balance of language and content is to become a pedagogical reality” (p. 262), there should be the availability of expert curriculum coordinators, strong mentorship and opportunities for collaboration. The two programs involved in this study developed content standards and language standards following separate curricular criteria (basing the content standards on a combination of International Baccalaureate and Common Core and followed ACTFL and YCT to decide language standards), which has created challenges for teachers to develop consistent lesson plans and find instructional materials that meet multiple layers of standards. Curriculum coordinators thus should develop a curricular framework in which theme and content are readily designated for every unit, and within each unit, language instruction is functionally and meaningfully integrated

with the relevant content. The curricula that the SIOP model has used may be a great reference since it aims to improve both English academic literacy and content for students.

The scarcity of materials has been discussed in many immersion research studies (e.g., Cammarata & Tedick, 2012; Fortune, Tedick, & Walker, 2008). Chinese teachers in this study also reported the same issue, particularly regarding supplemental readers that would enhance immersion students' Chinese literacy. Cammarata and Tedick (2012) suggested that program-level developed resources should be nationally disseminated if possible. For this purpose, an online resource-sharing platform targeting immersion teachers could be built, which would organize published materials, textbooks as well as supplemental reading materials that every immersion teacher could use by type of program model, grade level and subject. Moreover, Met and Lorenz (1997) linked the success of a school to a strong mentoring program. Thus, setting up strong mentorship within the immersion program is also critical, and the benefits of mentoring were reported by all the four teachers in this study. In addition, to ensure that the language instruction is not overlooked in content heavy settings, program administrators should monitor to ensure that the language-specific objectives are implemented in teachers' daily practice through an effective teacher evaluation system.

Furthermore, program administrators should also encourage parental involvement and teacher collaboration. According to Genesee (2011), there are "limits to the levels of L2 competence that students can achieve if their L2 learning and use are restricted to the immersion classroom" (p. 274). Immersion programs

should inform parents of the importance of exposing their children to the L2 outside school. There could be multiple ways for parents to be involved in their children's learning through L2, even if they do not know the language. For example, Dorner (2011) suggested providing information sessions which would contain testimonials from parents and students who had benefited from such experiences in immersion; while Genesee (2011) recommended that parents expand their children's L2 learning opportunities in the target language communities. What the two immersion programs in this study did was, as the teacher reported, to invite parents to attend the target cultural events organized by the school. In this way, parents may be more motivated to supervise their children's L2 learning by witnessing children's achievements. Furthermore, given the complexity concerning the interface of content and language, Kong (2009, 2014) suggested that collaboration between teachers of different specialties could be helpful and even necessary. Teachers in this study highly valued the collaboration with other teachers. Similarly, immersion teachers of different classes or grade levels should be encouraged to meet regularly to share their teaching resources and pedagogies. As immersion students have to take standardized tests assessing their content learning, immersion teachers, especially total immersion teachers (since there is limited English instructional time), should communicate with English teachers about the key content for the assessment to ensure that students are learning the critical content in both languages. However, this does not mean partial immersion has absolute advantages over total immersion, neither does it indicate any inferior effect of the total immersion teaching. As a matter of fact, one cannot draw comparative conclusions about the effects of total immersion and partial immersion

from this study, as this study mainly investigates CF which is only a small part of the overall considerations.

6.3 Limitations and Suggestions for Future Directions

Given the particularity of the participants and instructional context, I did not intend to generalize the research results of oral CF in all content-based instructional settings. Instead, by engaging in an exploration of four Chinese immersion classrooms, this study has shed light on some important issues about the oral CF and may help teachers, teacher educators and administrators to better serve the needs of students in immersion programs. More insights could be gained about the oral CF and its role in teaching and learning, if future research endeavors attend to the following features.

First, the limitation of the sample size in this study should be taken into consideration in future research. The sample size in this study was relatively small: I observed only four Chinese immersion classrooms including 4 teachers and 49 students. The study lacks control for individual differences among the participants. Teachers with different instructional styles and teaching experience might use CF differently in various instructional settings. For example, the difference in time devoted to whole-class instruction and group activities might affect the occurrence of CF or patterns of interactional contexts. The students in this study were young children, and adolescents or adults might react differently to the CF and prefer different forms of CF from children. In measuring learners' perception of CF, only a focus group of 6 students in each class (24 in total) were included. More students can be involved in future studies to produce more valid results.

Second, the potential influence of the data collection method on the research results should be noted. The effect of observation on the data should not be overlooked. Students might behave more actively than they usually do and initiate more interactions with teachers because of the presence of the researcher. Moreover, learners' perceptions of CF were measured by the selected students self-reporting their interpretations of the interactional episodes in the form of stimulated recall. The reliability of this "retrospective self-reported data is subject to concerns involving the time interval, memory decay, and the highly interpretive nature of such data" (Oliver & Mackey, p. 531). In other words, there is no guarantee that the thoughts elicited in the stimulated recall sessions were entirely the thoughts the participants had at the time a CF was given due to the retrospective nature of stimulated recall. It is possible that some of the stimulated recall comments were reflectional thoughts resulting from a task-induced effect (the selected students being tasked to watch the videotape and comment on the video clips).

Furthermore, there are several issues that this study has not examined but should be critical components of future investigations in second language or immersion education research. Firstly, this study did not analyze the type of linguistic target and its influence on the provision of and reaction to the CF. For example, Mackey et al. (2000) revealed that phonological and lexical feedback were perceived more accurately and were generally provided through negotiation and combination moves. Thus, further investigation is warranted on the generalizability of this finding in the Chinese immersion classrooms. Secondly, learners' delayed output after the CF needs exploration in addition to students' immediate response to CF. McDonough and

Mackey (2006) revealed that learners who did not immediately respond to a recast in the third turn could produce a modified output in subsequent turns. Therefore, it is of importance to analyze the occurrence of the delayed modified output if there is no production of immediate modification and how delayed it is. Thirdly, this study did not assess learning outcomes, which could assess the effects of different immersion programs. If future studies need to make a comprehensive comparison of total immersion and partial immersion, learning outcomes should be included. Learning outcomes of immersion teaching include language proficiency and academic achievement in immersion programs. The language proficiency can be measured in multiple formats: reading comprehension, grammaticality judgment, and written or oral production task. The language proficiency can also be measured along with the academic achievement if the testing language is the target language. The learning outcome needs to be distinguished as to whether it is preceded with CF, what type of CF it follows, or in what type of interactional context it occurs. Fourthly, this study did not examine the frequency of non-target-like utterances, which could record learners' linguistic performance in immersion settings. A record of such a type can be an alternative measurement for the outcomes of immersion programs.

Appendix B: Stimulated Recall--Instructions and Questions

Instructions

You are going to watch video clips from a lesson you participated. The video will be paused a few times while you are watching it. When the video is paused, you will be asked questions such as *what were you thinking at that time? What did you notice from your own words?* (please note that you need to report whatever you were thinking at the time of the lesson, but NOT what you are thinking now). If you want to say something in other places, ask the researcher to pause the video. The researcher is interested in what you were thinking at the time you were interacting with the teacher in class.

There is no right or wrong answer. Your response can be about anything, for example about the teacher, language, activity, or something else. Your response can be as long or as short as you want it to be. If you do not remember what you were thinking at that time, just say "I don't remember." There is no need for you to feel an obligation to say something meaningful at every pause. If you were not thinking anything, just say, "I wasn't thinking anything." The only rule is that you cannot ask your partner questions about anything.

Questions

Pause	Direct or indirect recipient of the CF	Questions: i.e., What were you thinking when the teacher/student say to you? What did you notice from your own words? What did you think made the teacher/student say so?
1		
2		
3		

4		
5		
6		
7		
8		
9		
10		

Appendix C: Interview Questions

First Interview—background information (with teachers)

1. Could you briefly tell me about your educational and training experiences before you came to this school? Any training after you came to this school?
2. Could you briefly introduce the class you teach? i.e. How many students? How old are they? What are their native languages? What is their prior knowledge about this subject?
3. Could you introduce the curriculum of the program?
4. Could you briefly describe their Chinese level, i.e. vocabulary size, different language skills? And their academic content development? And how they are assessed?

Second Interview—teachers' reflections and summary (with teachers)

1. How do you think of providing corrective feedback? Do you find it useful? How do you think of students' age and corrective feedback?
2. How do you think of this group of students generally? Students' language and content development?
3. How do you think of the immersion teaching? What do you want to learn more as an immersion teacher?
4. Do you have in-service professional training? If yes, please tell me more about it?
5. How do you think of the administration of the program? Do you think you get expected support?

Appendix D: IRB Approval



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DATE: February 23, 2015

TO: Qin Yao
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [669183-1] Content-based Instruction in the Context of Chinese Immersion:
An Exploration of Corrective Feedback

REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: APPROVED
APPROVAL DATE: February 23, 2015
EXPIRATION DATE: February 22, 2016
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 6 & 7

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of February 22, 2016.



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DATE: February 1, 2016

TO: Qin Yao
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [669183-2] Content-based Instruction in the Context of Chinese Immersion:
An Exploration of Corrective Feedback

REFERENCE #:
SUBMISSION TYPE: Continuing Review/Progress Report

ACTION: APPROVED
APPROVAL DATE: February 1, 2016
EXPIRATION DATE: February 22, 2017
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 6 and 7

Thank you for your submission of Continuing Review/Progress Report materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of February 22, 2017.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

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All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

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